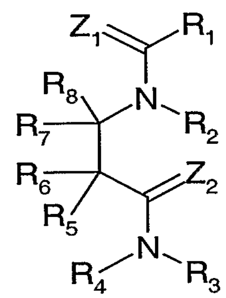
Novel Insecticides

The present invention relates to bicyclic bisamide derivatives, to processes for their preparation, to compositions comprising those compounds, and to their use for controlling insects or representatives of the order Acarina.

Bisamide derivatives with insecticidal action are known and described, for example, in US 2003/0229050.

There have now been found novel bicyclic bisamide derivatives with pesticidal properties. The present invention accordingly relates to compounds of formula I



(I),

in which

Z_1 is an oxygen atom; or a sulfur atom;

Z_2 is an oxygen atom; or a sulfur atom;

R_1 is an aryl or heteroaryl group, which is unsubstituted or substituted;

R_2 is hydrogen; or an organic substituent;

R_3 is hydrogen; or an organic substituent;

R_4 is hydrogen; or an organic substituent;

or R_3 and R_4, taken together, form, together with the nitrogen atom, to which they are attached, a ring, which is unsubstituted or substituted;

R_5 is hydrogen; or an unsubstituted or substituted alkyl group; or forms, taken together with R_8 or with a monovalent substituent attached to that atom of R_6, via which atom R_6 is directly connected with the carbon atom, shown in the formula I, which carries R_5, one additional bond;

R_6 and R_7, taken together, form, together with the two carbon atoms, shown in the formula I, to which atoms they are attached, a bicyclic ring system, which ring system is carbocyclic or heterocyclic, which ring system is substituted, in the manner shown in the

formula I, by the four substituents $-N(R_2)-C(=Z_1)-R_1$, $-C(=Z_2)-N(R_3)-R_4$, R_5 and R_8, and which ring system is optionally further substituted;

and R_8 is hydrogen; or an unsubstituted or substituted alkyl group; or forms, taken together with R_5 or with a monovalent substituent attached to that atom of R_7, via which atom R_7 is directly connected with the carbon atom, shown in the formula I, which carries R_8, one additional bond,

in free form or in salt form, where appropriate to tautomers, in free form or in salt form, of these compounds, to a process for the preparation and to the use of these compounds and tautomers, to pesticidal compositions whose active ingredient is selected from amongst these compounds and tautomers, in each case in free form or in agrochemically utilizable salt form, to a process for the preparation and to the use of these compositions, to plant propagation material treated with these compositions, to a method of controlling pests with these active ingredients and compositions, to intermediates, in free form or in salt form, for the preparation of these compounds, where appropriate to tautomers, in free form or in salt form, of these intermediates, and to a process for the preparation and to the use of these intermediates.

In some cases, the compounds of formula I can exist as tautomers. For example, if in the compounds of formula I the substituent $-N(R_2)-C(=Z_1)-R_1$ is $-N(R_2)-C(=O)-R_1$ and R_2 is hydrogen, corresponding compounds of formula I, i. e. those in which $-N(R_2)-C(=Z_1)-R_1$ is $-N(H)-C(=O)-R_1$, can be in equilibrium with the respective tautomers, in which the respective substituent has the tautomeric structure $-N=C(OH)-R_1$. Accordingly, the compounds of formula I hereinabove and hereinbelow are to be understood as including such tautomers, where appropriate, even though the latter are not mentioned specifically in each individual case.

Compounds of formula I which have at least one basic centre can form, for example, acid addition salts, for example with strong inorganic acids such as mineral acids, for example perchloric acid, sulfuric acid, nitric acid, nitrose acid, a phosphorus acid or a hydrohalic acid, with strong organic carboxylic acids, such as C_1-C_4alkanecarboxylic acids which are unsubstituted or substituted, for example by halogen, for example acetic acid, such as saturated or unsaturated dicarboxylic acids, for example oxalic acid, malonic acid, succinic acid, maleic acid, fumaric acid or phthalic acid, such as hydroxycarboxylic acids, for example ascorbic acid, lactic acid, malic acid, tartaric acid or citric acid, or such as benzoic acid, or

with organic sulfonic acids, such as C_1-C_4alkane- or arylsulfonic acids which are unsubstituted or substituted, for example by halogen, for example methane- or p-toluenesulfonic acid. Compounds of formula I which have at least one acidic group can form, for example, salts with bases, for example mineral salts such as alkali metal or alkaline earth metal salts, for example sodium, potassium or magnesium salts, or salts with ammonia or an organic amine, such as morpholine, piperidine, pyrrolidine, a mono-, di- or tri-lower-alkylamine, for example ethyl-, diethyl-, triethyl- or dimethylpropylamine, or a mono-, di- or trihydroxy-lower-alkylamine, for example mono-, di- or triethanolamine. Where appropriate, the corresponding internal salts can furthermore be formed. Preferred within the scope of the invention are agrochemically advantageous salts; however, the invention also encompasses salts which have disadvantage for agrochemical use, for example salts which are toxic to bees or fish, and which are employed, for example, for the isolation or purification of free compounds of formula I or agrochemically utilizable salts thereof. Owing to the close relationship between the compounds of formula I in free form and in the form of their salts, for the purposes of the invention the free compounds of formula I or their salts hereinabove and hereinbelow are respectively to be understood as including, where appropriate, the corresponding salts or the free compounds of formula I. The same applies analogously to tautomers of compounds of formula I and salts thereof. In general, the free form is preferred in each case.

Preferably the invention relates (2) to a compound according to (1) of formula I, in which

Z_1 is an oxygen atom; or a sulfur atom;

Z_2 is an oxygen atom; or a sulfur atom;

R_1 is a phenyl or naphthyl group, which is substituted independently by 1 or 2 substituents R_a and optionally further substituted independently by 1 to 3 substituents R_b;

R_a is cyano; nitro; halogen; C_1-C_6alkyl; halo-C_1-C_6alkyl; C_1-C_6alkoxy-C_1-C_6alkyl; C_2-C_6alkenyl; halo-C_2-C_6alkenyl; C_2-C_6alkynyl; halo-C_2-C_6alkynyl; C_3-C_6cycloalkyl; halo-C_3-C_6cycloalkyl; hydroxy; C_1-C_6alkoxy; halo-C_1-C_6alkoxy; C_3-C_6cycloalkoxy; mercapto; C_1-C_6alkylthio; halo-C_1-C_6alkylthio; C_1-C_6alkylsulfinyl; halo-C_1-C_6alkylsulfinyl; C_1-C_6alkylsulfonyl; halo-C_1-C_6alkylsulfonyl; amino; C_1-C_6alkylamino; halo-C_1-C_6alkylamino; di-C_1-C_6alkylamino, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen

atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-amino, in which the two haloalkyl groups are the same or different; C_3-C_6cycloalkylamino; N-(C_1-C_6alkyl)-N-(C_3-C_6cycloalkyl)-amino; carboxy; C_1-C_6alkoxycarbonyl; halo-C_1-C_6alkoxycarbonyl; aminocarbonyl; C_1-C_6alkylaminocarbonyl; halo-C_1-C_6alkylaminocarbonyl; di-C_1-C_6alkylaminocarbonyl, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-aminocarbonyl, in which the two haloalkyl groups are the same or different; C_1-C_6alkylcarbonyl; halo-C_1-C_6alkylcarbonyl; or tri-C_1-C_6alkylsilyl, in which the three alkyl groups are the same or different;

or 2 substituents R_a, which are attached to adjacent carbon atoms, taken together, are -(CH_2-)$_3$; -(CH_2-)$_4$; -(CH_2-)$_5$; -(CH=CH-)$_2$; -OCH_2O-; -O-(CH_2-)$_2$O-; -OCF_2O-; -(CF_2-)$_2$O-; -O-(CF_2-)$_2$; or -O-(CF_2-)$_2$O-;

R_b is halogen; C_1-C_6alkyl; C_2-C_6alkenyl; C_2-C_6alkynyl; C_3-C_6cycloalkyl; C_1-C_6alkoxy; C_1-C_6alkoxycarbonyl; or a phenyl, benzyl, phenoxy or monocyclic or bicyclic heteroaryl group, which group is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of the substituents R_a;

or R_1 is a monocyclic or bicyclic heteroaryl group, which is unsubstituted or substituted independently by 1 to 4 substituents R_c;

R_c is a substituent R_a; or a phenyl, benzyl, benzoyl, phenoxy or monocyclic or bicyclic heteroaryl group, which group is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of the substituents R_a;

R_2 is hydrogen; a C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl or C_3-C_6cycloalkyl group, which group is unsubstituted or substituted independently by one or more substituents, selected from the group, consisting of the substituents R_a; a group C(=O)R_d; or a group C(=S)R_d;

R_d is a substituent R_1; C_1-C_6alkyl; halo-C_1-C_6alkyl; C_1-C_6alkoxy-C_1-C_6alkyl; a group CH_2R_1; a group CH_2OR_1; a group CH_2SR_1; a group CH_2NHR_1, which group is optionally further substituted at the nitrogen atom by C_1-C_6alkyl or halo-C_1-C_6alkyl; C_2-C_6alkenyl; halo-

C_2-C_6alkenyl; C_2-C_6alkynyl; halo-C_2-C_6alkynyl; C_3-C_6cycloalkyl; halo-C_3-C_6cycloalkyl; C_1-C_6alkoxy; halo-C_1-C_6alkoxy; C_3-C_6cycloalkoxy; a group OR_1; C_1-C_6alkylthio; halo-C_1-C_6alkylthio; a group SR_1; C_1-C_6alkylamino; halo-C_1-C_6alkylamino; di-C_1-C_6alkylamino, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-amino, in which the two haloalkyl groups are the same or different; C_3-C_6cycloalkylamino; N-(C_1-C_6alkyl)-N-(C_3-C_6cycloalkyl)-amino; or a group NHR_1, which group is optionally further substituted at the nitrogen atom by C_1-C_6alkyl or halo-C_1-C_6alkyl;

R_3 is hydrogen; a C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl or C_3-C_6cycloalkyl group, which group is unsubstituted or substituted independently by one or more substituents, selected from the group, consisting of the substituents R_a; C_1-C_6alkoxy; halo-C_1-C_6alkoxy; C_3-C_6cycloalkoxy; C_1-C_6alkylthio; halo-C_1-C_6alkylthio; C_1-C_6alkylamino; halo-C_1-C_6alkylamino; di-C_1-C_6alkylamino, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-amino, in which the two haloalkyl groups are the same or different; C_3-C_6cycloalkylamino; N-(C_1-C_6alkyl)-N-(C_3-C_6cycloalkyl)-amino; C_1-C_6alkoxycarbonyl; halo-C_1-C_6alkoxycarbonyl; C_1-C_6alkylcarbonyl or halo-C_1-C_6alkylcarbonyl;

R_4 is hydrogen; a substituent R_1; a substituent R_e; a C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl or C_3-C_6cycloalkyl group, which group is unsubstituted or substituted independently by one or more substituents, selected from the group, consisting of the substituents R_a, the substituents R_e and a phenyl, benzoyl, phenoxy or monocyclic or bicyclic heteroaryl group, which group is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of the substituents R_c; a group CH_2OR_1; a group CH_2SR_1; a group CH_2NHR_1, which group is optionally further substituted at the nitrogen atom by C_1-C_6alkyl or halo-C_1-C_6alkyl; C_1-C_6alkoxy; halo-C_1-C_6alkoxy; C_3-C_6cycloalkoxy; a group OR_1; C_1-

C_6alkylthio; halo-C_1-C_6alkylthio; a group SR_1; C_1-C_6alkylsulfinyl; halo-C_1-C_6alkylsulfinyl; C_1-C_6alkylsulfonyl; halo-C_1-C_6alkylsulfonyl; C_1-C_6alkylamino; halo-C_1-C_6alkylamino; di-C_1-C_6alkylamino, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-amino, in which the two haloalkyl groups are the same or different; C_3-C_6cycloalkylamino; N-(C_1-C_6alkyl)-N-(C_3-C_6cycloalkyl)-amino; a group NHR_1, which group is optionally further substituted at the nitrogen atom by C_1-C_6alkyl or halo-C_1-C_6alkyl; a group $C(=O)R_d$; a group $C(=O)R_e$; a group $C(=S)R_d$; or a group $C(=S)R_e$;

R_e is a carbocyclyl or heterocyclyl group, which group is monocyclic or bicyclic and is non-aromatic, in which group 1 or 2 of the ring members are optionally selected from the group, consisting of the groups C(=O), S(=O) and $S(=O)_2$, and which group is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy;

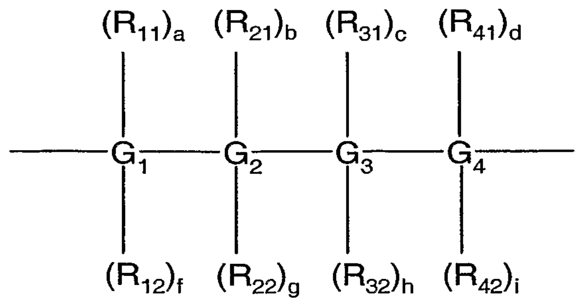
or R_3 and R_4, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 6 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy;

R_5 is hydrogen; C_1-C_6alkyl; or halo-C_1-C_6alkyl; or has one of the meanings defined hereinafter;

R_6 and R_7, taken together, are <u>either</u> a group of the formula

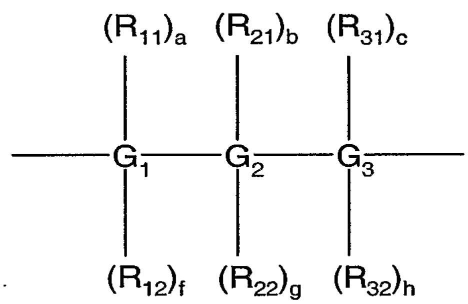
$$\begin{array}{ccccccccccc} & (R_{11})_a & & (R_{21})_b & & (R_{31})_c & & (R_{41})_d & & (R_{51})_e & \\ & | & & | & & | & & | & & | & \\ — & G_1 & — & G_2 & — & G_3 & — & G_4 & — & G_5 & — \\ & | & & | & & | & & | & & | & \\ & (R_{12})_f & & (R_{22})_g & & (R_{32})_h & & (R_{42})_i & & (R_{52})_j & \end{array} \qquad \text{(Ia)},$$

in which G_1 is attached to the carbon atom, shown in the formula I, that carries R_5; and in which G_5 is attached to the carbon atom, shown in the formula I, that carries R_8; <u>or</u> are a group of the formula



(Ib),

in which G_1 is attached to the carbon atom, shown in the formula I, that carries R_5; and in which G_4 is attached to the carbon atom, shown in the formula I, that carries R_8; <u>or</u> are a group of the formula



(Ic),

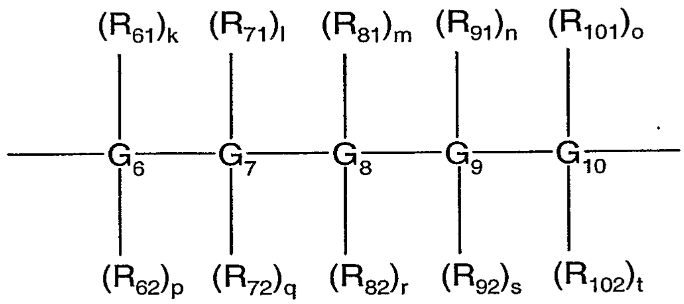
in which G_1 is attached to the carbon atom, shown in the formula I, that carries R_5; and in which G_3 is attached to the carbon atom, shown in the formula I, that carries R_8;

in which formulae Ia, Ib and Ic <u>either</u> a is 0; f is 0; and G_1 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> a is 0; f is 1; and G_1 is a nitrogen atom; <u>or</u> a is 1; f is 1; and G_1 is a carbon atom; <u>either</u> b is 0; g is 0; and G_2 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> b is 0; g is 1; and G_2 is a nitrogen atom; <u>or</u> b is 1; g is 1; and G_2 is a carbon atom; and <u>either</u> c is 0; h is 0; and G_3 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> c is 0; h is 1; and G_3 is a nitrogen atom; <u>or</u> c is 1; h is 1; and G_3 is a carbon atom;

in which formulae Ia and Ib <u>either</u> d is 0; i is 0; and G_4 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> d is 0; i is 1; and G_4 is a nitrogen atom; <u>or</u> d is 1; i is 1; and G_4 is a carbon atom;

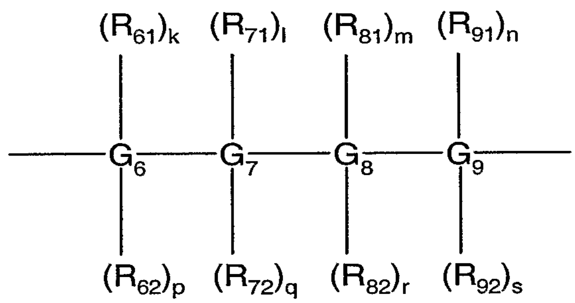
in which formula Ia <u>either</u> e is 0; j is 0; and G_5 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> e is 0; j is 1; and G_5 is a nitrogen atom; <u>or</u> e is 1; j is 1; and G_5 is a carbon atom;

in which formula Ia <u>either</u> f is 1; g is 1; and R_{12} and R_{22}, taken together, *<u>are</u>* *<u>either</u>* a group of the formula



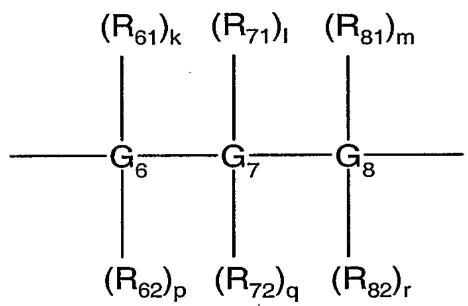
(Id),

in which G_6 is attached to G_1; and in which G_{10} is attached to G_2; *<u>or</u>* *<u>are</u>* a group of the formula



(Ie),

in which G_6 is attached to G_1; and in which G_9 is attached to G_2; *<u>or</u>* *<u>are</u>* a group of the formula



(If),

in which G_6 is attached to G_1; and in which G_8 is attached to G_2;

<u>or</u> g is 1; h is 1; and R_{22} and R_{32}, taken together, *<u>are</u>* *<u>either</u>* a group of the formula Id, in which G_6 is attached to G_2; and in which G_{10} is attached to G_3; *<u>or</u>* *<u>are</u>* a group of the formula Ie, in which G_6 is attached to G_2; and in which G_9 is attached to G_3; *<u>or</u>* *<u>are</u>* a group of the formula If, in which G_6 is attached to G_2; and in which G_8 is attached to G_3;

or h is 1; i is 1; and R_{32} and R_{42}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_3; and in which G_{10} is attached to G_4; *or* *are* a group of the formula Ie, in which G_6 is attached to G_3; and in which G_9 is attached to G_4; *or* *are* a group of the formula If, in which G_6 is attached to G_3; and in which G_8 is attached to G_4;

or i is 1; j is 1; and R_{42} and R_{52}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_4; and in which G_{10} is attached to G_5; *or* *are* a group of the formula Ie, in which G_6 is attached to G_4; and in which G_9 is attached to G_5; *or* *are* a group of the formula If, in which G_6 is attached to G_4; and in which G_8 is attached to G_5;

in which formula Ib either f is 1; g is 1; and R_{12} and R_{22}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_1; and in which G_{10} is attached to G_2; *or* *are* a group of the formula Ie, in which G_6 is attached to G_1; and in which G_9 is attached to G_2; *or* *are* a group of the formula If, in which G_6 is attached to G_1; and in which G_8 is attached to G_2;

or g is 1; h is 1; and R_{22} and R_{32}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_2; and in which G_{10} is attached to G_3; *or* *are* a group of the formula Ie, in which G_6 is attached to G_2; and in which G_9 is attached to G_3; *or* *are* a group of the formula If, in which G_6 is attached to G_2; and in which G_8 is attached to G_3;

or h is 1; i is 1; and R_{32} and R_{42}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_3; and in which G_{10} is attached to G_4; *or* *are* a group of the formula Ie, in which G_6 is attached to G_3; and in which G_9 is attached to G_4; *or* *are* a group of the formula If, in which G_6 is attached to G_3; and in which G_8 is attached to G_4;

in which formula Ic either f is 1; g is 1; and R_{12} and R_{22}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_1; and in which G_{10} is attached to G_2; *or* *are* a group of the formula Ie, in which G_6 is attached to G_1; and in which G_9 is attached to G_2; *or* *are* a group of the formula If, in which G_6 is attached to G_1; and in which G_8 is attached to G_2;

or g is 1; h is 1; and R_{22} and R_{32}, taken together, *are* *either* a group of the formula Id, in which G_6 is attached to G_2; and in which G_{10} is attached to G_3; *or* *are* a group of the formula Ie, in which G_6 is attached to G_2; and in which G_9 is attached to G_3; *or* *are* a group of the formula If, in which G_6 is attached to G_2; and in which G_8 is attached to G_3;

in which formulae Ia, Ib and Ic the atoms G_1 and G_2 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{12}, if G_1 is a nitrogen atom, and which is R_{11} or R_{12}, if G_1 is a carbon atom, and a second

substituent, which is R_{22}, if G_2 is a nitrogen atom, and which is R_{21} or R_{22}, if G_2 is a carbon atom, taken together;

in which formulae Ia, Ib and Ic the atoms G_2 and G_3 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{22}, if G_2 is a nitrogen atom, and which is R_{21} or R_{22}, if G_2 is a carbon atom, and a second substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, taken together;

in which formulae Ia and Ib the atoms G_3 and G_4 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, and a second substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, taken together;

in which formula Ia the atoms G_4 and G_5 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, and a second substituent, which is R_{52}, if G_5 is a nitrogen atom, and which is R_{51} or R_{52}, if G_5 is a carbon atom, taken together;

in which formulae Ia, Ib and Ic the atom G_1 can be connected with the carbon atom, shown in the formula I, that carries R_5, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{12}, if G_1 is a nitrogen atom, and which is R_{11} or R_{12}, if G_1 is a carbon atom, and a second substituent, which is R_5, taken together;

in which formula Ia the atom G_5 can be connected with the carbon atom, shown in the formula I, that carries R_8, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{52}, if G_5 is a nitrogen atom, and which is R_{51} or R_{52}, if G_5 is a carbon atom, and a second substituent, which is R_8, taken together;

in which formula Ib the atom G_4 can be connected with the carbon atom, shown in the formula I, that carries R_8, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, and a second substituent, which is R_8, taken together;

in which formula Ic the atom G_3 can be connected with the carbon atom, shown in the formula I, that carries R_8, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, and a second substituent, which is R_8, taken together;

in which formula Ia each of those substituents, selected from the group, consisting of the substituents R_{11}, R_{12}, R_{21}, R_{22}, R_{31}, R_{32}, R_{41}, R_{42}, R_{51} and R_{52}, which are different from the

two substituents, which, taken together, form the group of the formula Id, Ie or If, and different from any first substituent, if present, as defined hereinbefore for the formula Ia, and from any second substituent, if present, as defined hereinbefore for the formula Ia, is independently selected from the group, consisting of the substituents R_f;

in which formula Ib each of those substituents, selected from the group, consisting of the substituents R_{11}, R_{12}, R_{21}, R_{22}, R_{31}, R_{32}, R_{41} and R_{42}, which are different from the two substituents, which, taken together, form the group of the formula Id, Ie or If, and different from any first substituent, if present, as defined hereinbefore for the formula Ib, and from any second substituent, if present, as defined hereinbefore for the formula Ib, is independently selected from the group, consisting of the substituents R_f;

in which formula Ic each of those substituents, selected from the group, consisting of the substituents R_{11}, R_{12}, R_{21}, R_{22}, R_{31} and R_{32}, which are different from the two substituents, which, taken together, form the group of the formula Id, Ie or If, and different from any first substituent, if present, as defined hereinbefore for the formula Ic, and from any second substituent, if present, as defined hereinbefore for the formula Ic, is independently selected from the group, consisting of the substituents R_f;

R_f is hydrogen; or a substituent R_g; the total number of the substituents R_g, if present, having an upper limit of 5 for a group of the formula Ia; of 4 for a group of the formula Ib; and of 3 for a group of the formula Ic; which total number can, however, be limited for a specific group of the formula Ia, Ib or Ic to a value lower than the upper limit mentioned hereinbefore, which value is then equal to the number of the positions available for the substitution by a substituent R_g in this specific group;

R_g is <u>either</u> attached to a carbon atom and then selected from the group, consisting of the substituents $R_{g\text{-}c}$; <u>or</u> attached to a nitrogen atom and then selected from the group, consisting of the substituents $R_{g\text{-}n}$;

$R_{g\text{-}c}$ is a substituent R_c;

$R_{g\text{-}n}$ is cyano; nitro; C_1-C_6alkyl; halo-C_1-C_6alkyl; C_1-C_6alkoxy-C_1-C_6alkyl; C_2-C_6alkenyl; halo-C_2-C_6alkenyl; C_2-C_6alkynyl; halo-C_2-C_6alkynyl; C_3-C_6cycloalkyl; halo-C_3-C_6cycloalkyl; C_1-C_6alkoxy; halo-C_1-C_6alkoxy; C_3-C_6cycloalkoxy; C_1-C_6alkylthio; halo-C_1-C_6alkylthio; C_1-C_6alkylsulfinyl; halo-C_1-C_6alkylsulfinyl; C_1-C_6alkylsulfonyl; halo-C_1-C_6alkylsulfonyl; amino; C_1-C_6alkylamino; halo-C_1-C_6alkylamino; di-C_1-C_6alkylamino, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected

from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-amino, in which the two haloalkyl groups are the same or different; C_3-C_6cycloalkylamino; N-(C_1-C_6alkyl)-N-(C_3-C_6cycloalkyl)-amino; C_1-C_6alkoxycarbonyl; halo-C_1-C_6alkoxycarbonyl; aminocarbonyl; C_1-C_6alkylaminocarbonyl; halo-C_1-C_6alkylaminocarbonyl; di-C_1-C_6alkylaminocarbonyl, in which the two alkyl groups are the same or different or, taken together, form, together with the nitrogen atom, to which they are attached, a ring containing 1 ring nitrogen atom and 2 to 12 ring carbon atoms and optionally 1 further ring hetero atom, which then replaces 1 ring carbon atom and is selected from the group, consisting of an oxygen, a sulfur and a nitrogen atom, which ring is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of cyano, nitro, halogen, C_1-C_4alkyl and C_1-C_4alkoxy; di-(halo-C_1-C_6alkyl)-aminocarbonyl, in which the two haloalkyl groups are the same or different; C_1-C_6alkylcarbonyl; halo-C_1-C_6alkylcarbonyl; tri-C_1-C_6alkylsilyl, in which the three alkyl groups are the same or different; or a phenyl, benzyl, benzoyl, phenoxy or monocyclic or bicyclic heteroaryl group, which group is unsubstituted or substituted independently by 1 to 4 substituents, selected from the group, consisting of the substituents R_a;

in which formulae Id, Ie and If <u>either</u> k is 0; p is 0; and G_6 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> k is 0; p is 1; and G_6 is a nitrogen atom; <u>or</u> k is 1; p is 1; and G_6 is a carbon atom; <u>either</u> l is 0; q is 0; and G_7 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> l is 0; q is 1; and G_7 is a nitrogen atom; <u>or</u> l is 1; q is 1; and G_7 is a carbon atom; and <u>either</u> m is 0; r is 0; and G_8 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> m is 0; r is 1; and G_8 is a nitrogen atom; <u>or</u> m is 1; r is 1; and G_8 is a carbon atom;

in which formulae Id and Ie <u>either</u> n is 0; s is 0; and G_9 is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> n is 0; s is 1; and G_9 is a nitrogen atom; <u>or</u> n is 1; s is 1; and G_9 is a carbon atom;

in which formula Id <u>either</u> o is 0; t is 0; and G_{10} is a group C(=O); a group C(=S); an oxygen atom; a sulfur atom; a group S(=O); or a group $S(=O)_2$; <u>or</u> o is 0; t is 1; and G_{10} is a nitrogen atom; <u>or</u> o is 1; t is 1; and G_{10} is a carbon atom;

in which formulae Id, Ie and If the atoms G_6 and G_7 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{62}, if

G_6 is a nitrogen atom, and which is R_{61} or R_{62}, if G_6 is a carbon atom, and a second substituent, which is R_{72}, if G_7 is a nitrogen atom, and which is R_{71} or R_{72}, if G_7 is a carbon atom, taken together;

in which formulae Id, Ie and If the atoms G_7 and G_8 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{72}, if G_7 is a nitrogen atom, and which is R_{71} or R_{72}, if G_7 is a carbon atom, and a second substituent, which is R_{82}, if G_8 is a nitrogen atom, and which is R_{81} or R_{82}, if G_8 is a carbon atom, taken together;

in which formulae Id and Ie the atoms G_8 and G_9 can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{82}, if G_8 is a nitrogen atom, and which is R_{81} or R_{82}, if G_8 is a carbon atom, and a second substituent, which is R_{92}, if G_9 is a nitrogen atom, and which is R_{91} or R_{92}, if G_9 is a carbon atom, taken together;

in which formula Id the atoms G_9 and G_{10} can be connected by one additional bond, which bond, if present, is represented by a first substituent, which is R_{92}, if G_9 is a nitrogen atom, and which is R_{91} or R_{92}, if G_9 is a carbon atom, and a second substituent, which is R_{102}, if G_{10} is a nitrogen atom, and which is R_{101} or R_{102}, if G_{10} is a carbon atom, taken together;

in which formulae Id, Ie and If the atom G_6 can be connected <u>either</u> with the atom G_1, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{62}, if G_6 is a nitrogen atom, and which is R_{61} or R_{62}, if G_6 is a carbon atom, and a second substituent, which is R_{12}, if G_1 is a nitrogen atom, and which is R_{11} or R_{12}, if G_1 is a carbon atom, taken together;
<u>or</u> with the atom G_2, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{62}, if G_6 is a nitrogen atom, and which is R_{61} or R_{62}, if G_6 is a carbon atom, and a second substituent, which is R_{22}, if G_2 is a nitrogen atom, and which is R_{21} or R_{22}, if G_2 is a carbon atom, taken together;
<u>or</u> with the atom G_3, shown in the formulae Ia and Ib, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{62}, if G_6 is a nitrogen atom, and which is R_{61} or R_{62}, if G_6 is a carbon atom, and a second substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, taken together;
<u>or</u> with the atom G_4, shown in the formula Ia, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{62}, if G_6 is a nitrogen atom, and which is R_{61} or

R_{62}, if G_6 is a carbon atom, and a second substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, taken together;

in which formula Id the atom G_{10} can be connected either with the atom G_2, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{102}, if G_{10} is a nitrogen atom, and which is R_{101} or R_{102}, if G_{10} is a carbon atom, and a second substituent, which is R_{22}, if G_2 is a nitrogen atom, and which is R_{21} or R_{22}, if G_2 is a carbon atom, taken together;
or with the atom G_3, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{102}, if G_{10} is a nitrogen atom, and which is R_{101} or R_{102}, if G_{10} is a carbon atom, and a second substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, taken together;
or with the atom G_4, shown in the formulae Ia and Ib, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{102}, if G_{10} is a nitrogen atom, and which is R_{101} or R_{102}, if G_{10} is a carbon atom, and a second substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, taken together;
or with the atom G_5, shown in the formula Ia, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{102}, if G_{10} is a nitrogen atom, and which is R_{101} or R_{102}, if G_{10} is a carbon atom, and a second substituent, which is R_{52}, if G_5 is a nitrogen atom, and which is R_{51} or R_{52}, if G_5 is a carbon atom, taken together;

in which formula Ie the atom G_9 can be connected either with the atom G_2, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{92}, if G_9 is a nitrogen atom, and which is R_{91} or R_{92}, if G_9 is a carbon atom, and a second substituent, which is R_{22}, if G_2 is a nitrogen atom, and which is R_{21} or R_{22}, if G_2 is a carbon atom, taken together;
or with the atom G_3, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{92}, if G_9 is a nitrogen atom, and which is R_{91} or R_{92}, if G_9 is a carbon atom, and a second substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, taken together;
or with the atom G_4, shown in the formulae Ia and Ib, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{92}, if G_9 is a nitrogen atom, and which is R_{91} or R_{92}, if G_9 is a carbon atom, and a second substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, taken together;
or with the atom G_5, shown in the formula Ia, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{92}, if G_9 is a nitrogen atom, and which is R_{91} or

R_{92}, if G_9 is a carbon atom, and a second substituent, which is R_{52}, if G_5 is a nitrogen atom, and which is R_{51} or R_{52}, if G_5 is a carbon atom, taken together;

in which formula If the atom G_8 can be connected either with the atom G_2, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{82}, if G_8 is a nitrogen atom, and which is R_{81} or R_{82}, if G_8 is a carbon atom, and a second substituent, which is R_{22}, if G_2 is a nitrogen atom, and which is R_{21} or R_{22}, if G_2 is a carbon atom, taken together;
or with the atom G_3, shown in the formulae Ia, Ib and Ic, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{82}, if G_8 is a nitrogen atom, and which is R_{81} or R_{82}, if G_8 is a carbon atom, and a second substituent, which is R_{32}, if G_3 is a nitrogen atom, and which is R_{31} or R_{32}, if G_3 is a carbon atom, taken together;
or with the atom G_4, shown in the formulae Ia and Ib, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{82}, if G_8 is a nitrogen atom, and which is R_{81} or R_{82}, if G_8 is a carbon atom, and a second substituent, which is R_{42}, if G_4 is a nitrogen atom, and which is R_{41} or R_{42}, if G_4 is a carbon atom, taken together;
or with the atom G_5, shown in the formula Ia, by one additional bond, which bond, if present, is represented by a first substituent, which is R_{82}, if G_8 is a nitrogen atom, and which is R_{81} or R_{82}, if G_8 is a carbon atom, and a second substituent, which is R_{52}, if G_5 is a nitrogen atom, and which is R_{51} or R_{52}, if G_5 is a carbon atom, taken together;

in which formula Id each of those substituents, selected from the group, consisting of the substituents R_{61}, R_{62}, R_{71}, R_{72}, R_{81}, R_{82}, R_{91}, R_{92}, R_{101} and R_{102}, which are different from any first substituent, if present, as defined hereinbefore for the formula Id, and from any second substituent, if present, as defined hereinbefore for the formula Id, is independently selected from the group, consisting of the substituents R_h;

in which formula Ie each of those substituents, selected from the group, consisting of the substituents R_{61}, R_{62}, R_{71}, R_{72}, R_{81}, R_{82}, R_{91} and R_{92}, which are different from any first substituent, if present, as defined hereinbefore for the formula Ie, and from any second substituent, if present, as defined hereinbefore for the formula Ie, is independently selected from the group, consisting of the substituents R_i;

in which formula If each of those substituents, selected from the group, consisting of the substituents R_{61}, R_{62}, R_{71}, R_{72}, R_{81} and R_{82}, which are different from any first substituent, if present, as defined hereinbefore for the formula If, and from any second substituent, if present, as defined hereinbefore for the formula If, is independently selected from the group, consisting of the substituents R_h;

R_h is hydrogen; or a substituent R_j; the total number of the substituents R_j, if present, having an upper limit of 6 for a group of the formula Id; and of 4 for a group of the formula If; which total number can, however, be limited for a specific group of the formula Id or If to a value lower than the upper limit mentioned hereinbefore, which value is then equal to the number of the positions available for the substitution by a substituent R_j in this specific group;

R_i is hydrogen; or a substituent R_k; the total number of the substituents R_k, if present, having an upper limit of 5; which total number can, however, be limited for a specific group of the formula Ie to a value lower than the upper limit mentioned hereinbefore, which value is then equal to the number of the positions available for the substitution by a substituent R_k in this specific group;

R_j is <u>either</u> attached to a carbon atom and then selected from the group, consisting of the substituents $R_{j\text{-}c}$; <u>or</u> attached to a nitrogen atom and then selected from the group, consisting of the substituents $R_{j\text{-}n}$;

$R_{j\text{-}c}$ is a substituent R_c;

$R_{j\text{-}n}$ is a substituent $R_{g\text{-}n}$;

R_k is <u>either</u> attached to a carbon atom and then selected from the group, consisting of the substituents $R_{k\text{-}c}$; <u>or</u> attached to a nitrogen atom and then selected from the group, consisting of the substituents $R_{k\text{-}n}$;

or 2 substituents R_k, the first of which is attached to the atom G_6 and is represented by R_{62}, if G_6 is a nitrogen atom, and by R_{61} or R_{62}, if G_6 is a carbon atom, and the second of which is attached to the atom G_9 and is represented by R_{92}, if G_9 is a nitrogen atom, and by R_{91} or R_{92}, if G_9 is a carbon atom, taken together, are $-CH_2-$; or -O-;

$R_{k\text{-}c}$ is a substituent R_c;

$R_{k\text{-}n}$ is a substituent $R_{g\text{-}n}$;

R_8 is hydrogen; C_1-C_6alkyl; or halo-C_1-C_6alkyl; or has one of the meanings defined hereinbefore or hereinafter;

or R_5 and R_8, taken together, are a bond;

with the proviso, that

(i) a ring oxygen atom, if present, is not directly connected with a further ring oxygen atom, if any;

(ii) a ring carbon atom, selected from the group, consisting of G_1, G_2, G_3, G_4, G_5, G_6, G_7, G_8, G_9 and G_{10}, is, if present, not directly connected with any other atom by a triple bond or with any other 2 different atoms by 2 double bonds;

(iii) not more than 6 of the variables G_1, G_2, G_3, G_4, G_5, G_6, G_7, G_8, G_9 and G_{10} can, if present, be selected from the group, consisting of an oxygen atom, a sulfur atom, a group S(=O), a group $S(=O)_2$ and a nitrogen atom, each of the remaining of these variables, if any, being selected from the group, consisting of a carbon atom, a group C(=O) and a group C(=S), and not more than 3 of the said 6 variables can be selected from the group, consisting of an oxygen atom, a sulfur atom, a group S(=O) and a group $S(=O)_2$; and

(iv) unless otherwise defined hereinbefore, the meaning of a variable at a certain occurrence can be selected independently from the meaning of the same variable at any other occurrence, if any.

Unless otherwise defined, the general terms used hereinabove and hereinbelow have the meanings which follow.

Halogen - as a group per se and as a structural element of other groups and compounds, such as haloalkyl - is, for example, fluorine, chlorine, bromine or iodine, in particular flluorine, chlorine or bromine, but especially chlorine or bromine.

Unless otherwise defined, carbon-containing groups and compounds comprise for example in each case 1 up to and including 15, preferably 1 up to and including 10, especially 1 up to and including 8, in particular 1 up to and including 5, especially 1 or 2, carbon atom(s).

Cycloalkyl - as a group per se and as a structural element of other groups and compounds, such as halocycloalkyl - is, in each case with due consideration of the number of carbon atoms contained in each case in the relevant group or compound, for example cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl.

Alkyl - as a group per se and as a structural element of other groups and compounds, such as haloalkyl - is, in each case with due consideration of the number of carbon atoms contained in each case in the relevant group or compound, either straight-chain, for example methyl, ethyl, propyl, butyl, pentyl or hexyl, or branched, for example isopropyl, isobutyl, sec-butyl, tert-butyl, isopentyl, neopentyl or isohexyl.

Alkenyl - as a group per se and as a structural element of other groups and compounds, such as haloalkenyl - is, in each case with due consideration of the number of carbon atoms

contained in each case in the relevant group or compound, either straight-chain or branched and comprises in each case 2 or more than 2 or preferably 1 carbon-carbon double bond(s), the double bonds of these substituents being separated from the remaining moiety of the compound I by preferably at least one saturated carbon atom, and is, for example, allyl, propen-2-yl, methallyl, but-2-en-1-yl, but-3-en-1-yl or pent-4-en-1-yl.

Alkynyl - as a group per se and as a structural element of other groups and compounds, such as haloalkynyl - is, in each case with due consideration of the number of carbon atoms contained in each case in the relevant group or compound, either straight-chain or branched and comprises in each case 2 or more than 2 or preferably 1 carbon-carbon triple bond(s), the triple bonds of these substituents being separated from the remaining moiety of the compound I by preferably at least one saturated carbon atom, and is, for example, propargyl, but-2-ynyl or but-3-yn-2-yl.

Aryl is, for example, naphthyl or, preferably, phenyl.

Heteroaryl has, for example, an aromatic ring skeleton composed of a ring having 5 or 6 ring members or of a combination of at least two rings having in each case independently of one another 5 or 6 ring members, where for example 1 up to and including 4 of the ring members is (are) (a) heteroatom(s) selected from the group consisting of nitrogen, oxygen and sulfur, and is, for example, pyridyl, thienyl, pyrazolyl, thiazolyl, thiadiazolyl, furyl, oxadiazolyl, indolizinyl, pyrimidyl, quinolyl or pteridinyl.

Non-aromatic heterocyclyl has, for example, a non-aromatic ring skeleton composed of a ring having 5 or 6 ring members or of a combination of at least two rings having in each case independently of one another 5 or 6 ring members, where for example 1 up to and including 4 of the ring members is (are) (a) heteroatom(s) selected from the group consisting of nitrogen, oxygen and sulfur and is, for example, piperidyl, pyrrolinyl, tetrahydrofuryl or chromanyl.

Halogen-substituted carbon-containing groups and compounds, such as haloalkyl, can be partially halogenated or perhalogenated, where, in the case of polyhalogenation, the halogen substituents can be identical or different.

The following are further preferred embodiments within the scope of the invention:

(3) A compound according to (1) or (2) of the formula I, in which Z_1 is an oxygen atom;

(4) A compound according to any one of (1) to (3) of the formula I, in which Z_2 is an oxygen atom;

(5) A compound according to any one of (1) to (4) of the formula I, in which R_1 is a phenyl, pyridyl or pyrazolyl group, which is unsubstituted or preferably substituted;
especially a phenyl, pyridyl or pyrazolyl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, C_1-C_6alkyl, halo-C_1-C_6alkyl, C_1-C_6alkoxy, halo-C_1-C_6alkoxy and a phenyl or pyridyl group, which group is unsubstituted or preferably substituted;
more especially a phenyl, pyridyl or pyrazolyl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, C_1-C_6alkyl, halo-C_1-C_6alkyl, halo-C_1-C_6alkoxy and a phenyl or pyridyl group, which group is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen and C_1-C_6alkyl;
preferably a phenyl or pyridyl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of C_1-C_6alkyl and halo-C_1-C_6alkyl; or a pyrazolyl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, C_1-C_6alkyl, halo-C_1-C_6alkyl, halo-C_1-C_6alkoxy and a phenyl or pyridyl group, which group is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen and C_1-C_6alkyl;
more preferably a pyrazolyl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, C_1-C_6alkyl, halo-C_1-C_6alkyl, halo-C_1-C_6alkoxy and a phenyl or pyridyl group, which group is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen and C_1-C_6alkyl;
especially a pyrazol-3-yl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, C_1-C_6alkyl, halo-C_1-C_6alkyl, halo-C_1-C_6alkoxy and a phenyl or pyridyl group, which group is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen and C_1-C_6alkyl;
more especially a pyrazol-3-yl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, halo-C_1-C_6alkyl, halo-C_1-

C_6alkoxy and a phenyl or pyridyl group, which group is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen and C_1-C_6alkyl;
preferably a pyrazol-3-yl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, halo-C_1-C_6alkyl, halo-C_1-C_6alkoxy and a pyridyl group, which group is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen;
more preferably a pyrazol-3-yl group, which is substituted independently by 1 to 3 substituents, selected from the group, consisting of halogen, halo-C_1-C_6alkyl, halo-C_1-C_6alkoxy and a pyrid-2-yl group, which group is substituted independently by 1 or 2 substituents, selected from the group, consisting of halogen;
especially a pyrazol-5-yl group, which is substituted in the 3-position by halogen, halo-C_1-C_6alkyl or halo-C_1-C_6alkoxy and in the 1-position by a pyrid-2-yl group, which group is substituted independently by 1 or 2 substituents, selected from the group, consisting of halogen;
more especially a pyrazol-5-yl group, which is substituted in the 3-position by halogen, halo-C_1-C_6alkyl or halo-C_1-C_6alkoxy and in the 1-position by a pyrid-2-yl group, which group is substituted in the 3-position by halogen;
preferably a pyrazol-5-yl group, which is substituted in the 3-position by halogen, halo-C_1-C_6alkyl or halo-C_1-C_6alkoxy and in the 1-position by a pyrid-2-yl group, which group is substituted in the 3-position by chlorine or bromine;
more preferably a pyrazol-5-yl group, which is substituted in the 3-position by halo-C_1-C_6alkyl and in the 1-position by a pyrid-2-yl group, which group is substituted in the 3-position by chlorine or bromine;
most preferably a pyrazol-5-yl group, which is substituted in the 3-position by trifluoromethyl and in the 1-position by a pyrid-2-yl group, which group is substituted in the 3-position by chlorine or bromine;

(6) A compound according to any one of (1) to (5) of the formula I, in which R_2 is hydrogen or C_1-C_6alkyl;
preferably hydrogen;

(7) A compound according to any one of (1) to (6) of the formula I, in which R_3 is hydrogen or C_1-C_6alkyl;
preferably hydrogen;

(8) A compound according to any one of (1) to (7) of the formula I, in which R_4 is C_1-C_6alkyl; preferably methyl or isopropyl;

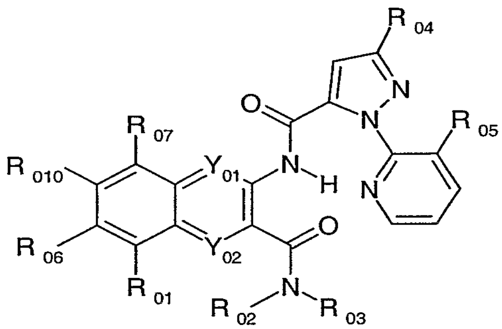
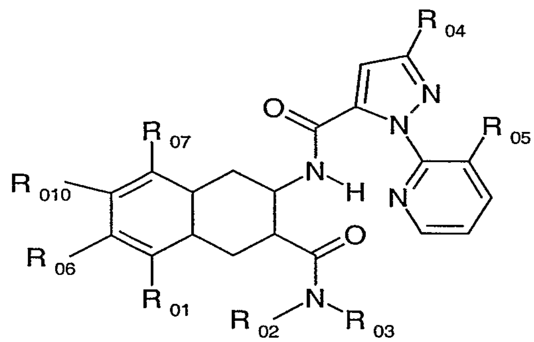
(9) A compound according to any one of (1) to (8) of the formula I, in which R_5 and R_8, taken together, are a bond;

(10) A compound according to any one of (1) to (9) of the formula I, in which R_6 and R_7, taken together, are a group of the formula Ib or a group of the formula Ic;

(11) A compound according to any one of (1) to (10) of the formula I, in which the two carbon atoms, shown in the formula I, to which atoms R_6 and R_7 are attached, are two ring members of an aromatic ring;

(12) A compound according to any one of (1) to (11) of the formula I, in which R_6 and R_7, taken together, form, together with the two carbon atoms, shown in the formula I, to which atoms they are attached, and together with R_5 and with R_8, one of the bicyclic ring systems shown in the formulae T1 to T85, or shown in the formulae T1 to T71, each of which ring systems is substituted by the two substituents -N(R_2)-C(=Z_1)-R_1 and -C(=Z_2)-N(R_3)-R_4;
preferably taken together, form, together with the two carbon atoms, shown in the formula I, to which atoms they are attached, and together with R_5 and with R_8, one of the bicyclic ring systems shown in the formulae T1, T6, T7, T21, T37 and T38, each of which ring systems is substituted by the two substituents -N(R_2)-C(=Z_1)-R_1 and -C(=Z_2)-N(R_3)-R_4;
more preferably taken together, form, together with the two carbon atoms, shown in the formula I, to which atoms they are attached, and together with R_5 and with R_8, one of the bicyclic ring systems shown in the formulae T1 and T7, or shown in the formulae T2, T22, T75, T76, T78, T79 and T81, each of which ring systems is substituted by the two substituents -N(R_2)-C(=Z_1)-R_1 and -C(=Z_2)-N(R_3)-R_4.

A further preferred subgroup of the compounds of formula I is represented by the compounds of formulae VIIa and VIIb

 (VIIa),  (VIIb),

wherein

R_{01} is hydrogen; amino or nitro;

R_{02} is hydrogen or C_1-C_4alkyl;

R_{03} is C_1-C_4alkyl, C_1-C_4alkyl mono- or disubstituted by cyano, COOH, nitro, C_1-C_4alkoxy or cyclopropyl;

C_2-C_8alkenyl, C_2-C_8alkenyl substituted by halogen;

C_1-C_4alkoxy, C_3-C_6-alkinyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropyl substituted by C_1-C_4alkyl, pyridyl, phenyl-C_2-C_6alkenyl or cyclopropyl;

cyclobutyl substituted by C_1-C_4alkyl;

cyclopentylthio-C_1-C_4alkyl, benzyloxy, benzyloxy substituted by halogen;

benzylthio-C_1-C_4alkyl, wherein the benzyl group may itself be substituted by C_1-C_4alkyl;

thiophenyl substituted by halophenyl;

phenoxy-C_1-C_4alkyl, wherein the phenyl group may be mono- or disubstituted by halogen;

phenyl-C_1-C_4alkyl, wherein the phenyl group may itself be mono- or disubstituted by substituents selected from halogen, nitro, benzothiazol-2-yloxy, C_1-C_4haloalkyl, C_1-C_4alkoxy and C_1-C_4alkyl;

3,4-dihydro-2H-benzo[b][1,4]dioxepinyl, 1,2,3,4-tetrahydro-naphthalenyl substituted by C_1-C_4alkoxy;

C_2-C_6alkenyloxy, isoxazolyl substituted by C_1-C_4alkyl;

thiazolyl, C_1-C_4alkoxycarbonyl-C_1-C_4alkyl, phenyl substituted by hydroxy, halophenyloxy, C_1-C_4alkyl-silyl(C_1-C_4-alkyl)$_3$ or C_2-C_6alkinyl;

pyridyl substituted by C_1-C_4alkoxy;

C_1-C_6alkylthio-C_1-C_4alkyl, C_2-C_6alkenylthio-C_1-C_4alkyl, C_3-C_6alkinylthio-C_1-C_4alkyl, dioxolan-2-yl-C_1-C_4alkyl, (C_1-C_4alkyl-dioxolan-2-yl)-C_1-C_4alkyl, triazolyl-C_1-C_4alkyl, thienyl-C_1-C_4alkyl, morpholinyl-C_1-C_4alkyl, C_1-C_4alkylthio-C_1-C_4alkyl, 2,3-dihydro-1H-isoindolyl, halo-substituted-

thiazolyl-C_1-C_4alkyl, C_1-C_4alkylsulfonyl-C_1-C_4alkyl or quinolylthio-C_1-C_4alkyl, wherein the quinoline group may be substituted by C_1-C_4haloalkyl;
R_{04} is C_1-C_4haloalkyl;
R_{05} is halogen;
each of R_{06} and R_{010}, which may be the same or different, represents hydrogen, C_1-C_6alkyl, C_1-C_6alkoxycarbonyloxy, C_1-C_6alkylcarbonylamino, hydroxy, cyano, halogen or C_1-C_6lkoxy;
R_{07} is hydrogen, nitro or halogen;
Y_{01} is $C(R_{08})$, sulfur, nitrogen or a chemical bond;
R_{08} is hydrogen, halogen, C_1-C_4alkyl or nitro;
Y_{02} is $C(R_{09})$, a chemical bond, or is nitrogen or sulfur; and R_{09} is hydrogen, phenyl, phenyl substituted by halogen, or halogen.

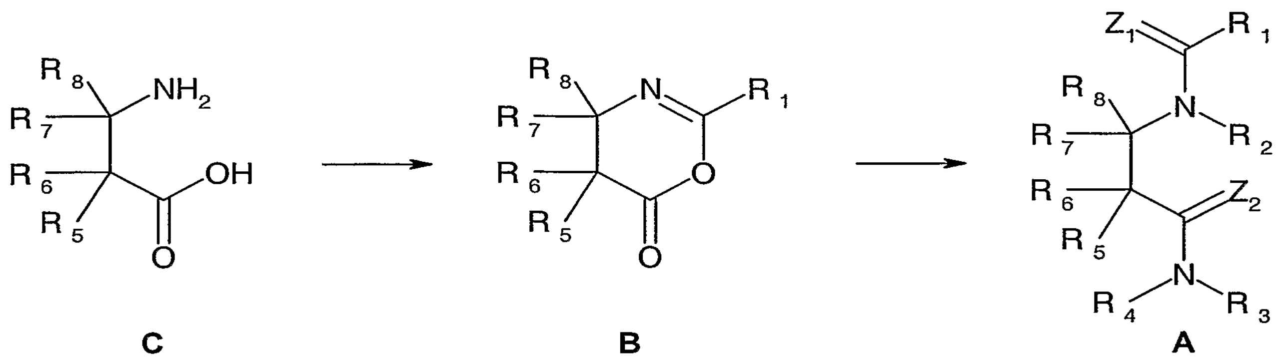
Preferred compounds of the formula VIIa are those, wherein
R_{01} is hydrogen; R_{02} is hydrogen; R_{03} is C_1-C_4alkyl, preferably methyl; R_{04} is C_1-C_4fluoroalkyl, preferably trifluoromethyl; R_{05} is chloro; R_{06} is halogen, preferably chloro; R_{07} is hydrogen; R_{010} is hydrogen; Y_{01} is $C(R_{08})$; R_{08} is halogen, preferably chloro; Y_{02} is $C(R_{09})$, and R_{09} is hydrogen.

Especially preferred within the scope of the invention are the compounds of the formula I mentioned in the Examples P3, P6 and P9 to P11.

Individually preferred within the scope of the invention is each of the compounds T1.1, T1.3, T6.1, T6.3, T7.1, T7.3, T21.3, T37.3 and T38.3.

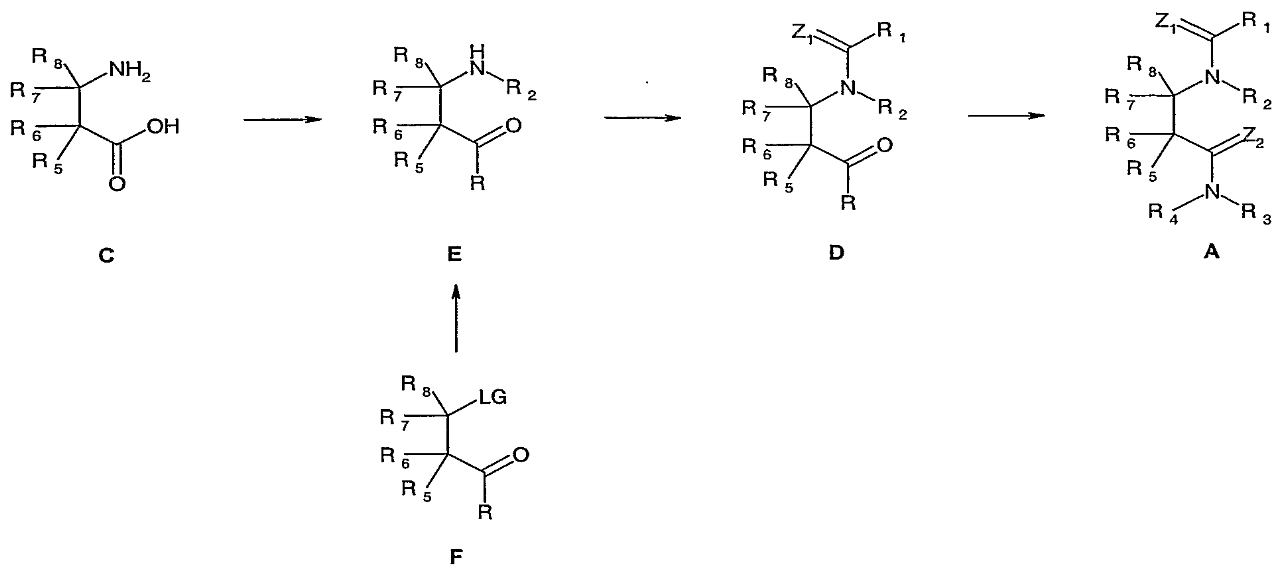
Also individually preferred within the scope of the invention is each of the compounds T2.1, T22.3, T75.1, T75.3, T76.1, T76.3, T78.1, T79.1 and T81.1.

The process according to the invention for preparing compounds of the formula I is carried out analogously to known processes. In the section that follows, the substituents R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, Z_1 and Z_2 are as defined under formula I in claim 1 unless otherwise stated.



Compounds of formula A, wherein Z_1 and Z_1 are oxygen and R_1 is hydrogen, may be made from the ring opening of a benzoxazinone of formula B with an amine of formula NHR_3R_4. Such amines are either known or they may be made analogously to known processes. Benzoxazinones of formula B may be made from amino acids of formula C by treatment with a carboxylic acid of formula R_1-COOH and a dehydrating reagent such as methanesulfonyl chloride (optionally in the presence of a base such as pyridine or triethylamine). Alternatively benzoxazinones of formula B may be obtained by the treatment of amino acids of formula C with an acid chloride of formula R_1-COCl under basic conditions (for example in pyridine), followed if necessary by a second cyclisation step (which may be achieved using a dehydrating agent for example acetic anhydride). Acid chlorides of formula R_1-COCl may be made from carboxylic acids of formula R_1-COOH under standard conditions (for example by treatment with thionyl chloride or oxalyl chloride). Carboxylic acids of formula R_1-COOH are either known compounds or they may be made analogously to known processes.

Compounds of formula A, wherein Z_1 and Z_1 are sulfur, may be made from compounds of formula A, wherein Z_1 and Z_2 are oxygen, by treatment with a thio-transfer reagent such as Lawesson's reagent or phosphorus pentasulfide.



Alternatively, compounds of formula A, wherein Z_1 and Z_1 are oxygen, may be made by treatment of compounds of formula D, wherein Z_1 is oxygen and R is OH, C_1-C_4alkoxy or Cl, with an amine of formula NHR_3R_4. The standard conditions for such acylation reactions are as follows: when R is OH such reactions are usually carried out in the presence of a coupling reagent such as DCC (N,N'-dicyclohexylcarbodiimide) or EDC (1-Ethyl-3-[3-dimethylamino-propyl]carbodiimide hydrochloride) optionally in the presence of a nucleophilic catalyst such as hydroxybenzotriazole or 4-(dimethylamino)-pyridine. When R is Cl, such reactions are usually carried out under basic conditions (for example in the presence of pyridine or triethylamine), again optionally in the presence of a nucleophilic catalyst. It may be possible to convert esters (wherein R is C_1-C_4alkoxy) directly to amides by heating the ester and amine together in a thermal process.

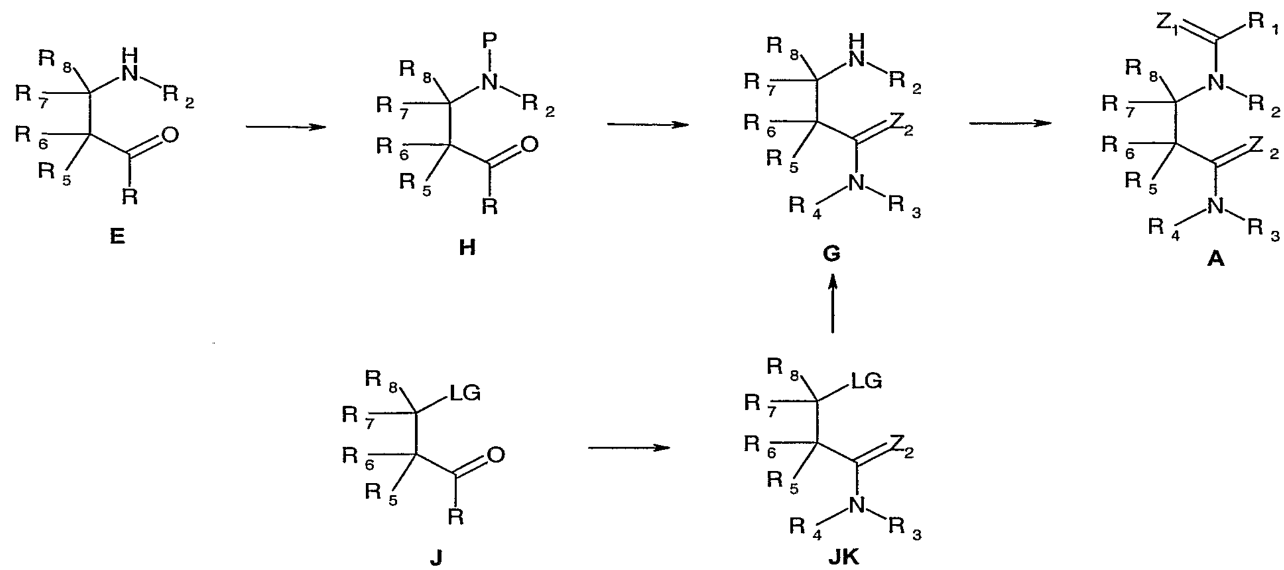
Acid chlorides of formula D, wherein Z_1 is oxygen and R is Cl, may be made from carboxylic acids of formula D, wherein Z_1 is oxygen and R is OH, under standard conditions (such as treatment with thionyl chloride or oxalyl chloride). Carboxylic acids of formula D, wherein Z_1 is oxygen and R is OH, may be formed from esters of formula D, wherein Z_1 is oxygen and R is C_1-C_4alkoxy. It is well known for a person skilled in the art that there are many methods for the hydrolysis of such esters depending on the nature of the alkoxy group. One widely used method to achieve such a transformation is the treatment of the ester with an alkali such as sodium hydroxide in a solvent such as ethanol.

Esters of formula D, wherein Z_1 is oxygen and R is C_1-C_4alkoxy, may be made by treatment of compounds of formula E, wherein R is C_1-C_4alkoxy, by acylation with compounds of formula
R_1-COOH or R_1-COCl under standard conditions as previously described. Compounds of formula E, wherein R is C_1-C_4alkoxy, may be made from compounds of formula C by sequential treatment with an alcohol under acidic conditions and then formation of the N-R_2 bond. It is known to a person skilled in the art that there are many reported methods for the formation of this bond depending on the nature of the substituent R_2. For example, reductive amination may be achieved by treatment of the amine with an aldehyde or ketone and a reducing agent such as sodium cyanoborohydride. Alternatively alkylation may be achieved by treating the amine with an alkylating agent such as an alkyl halide, optionally in the presence of a base. Alternatively arylation may be achieved by treatment of the amine with an aryl halide or sulfonate in the presence of a suitable catalyst/ligand system, often a palladium (0) complex.

Alternatively, compounds of formula E, wherein R is C_1-C_4alkoxy, may be made from a compound of formula F, wherein R is C_1-C_4alkoxy and LG is a leaving group such as fluoro, chloro or sulfonate, via nucleophilic displacement of the leaving group by an amine of formula R_2-NH_2. Such compounds of formula F and amines of formula R_2-NH_2 are either known compounds or can be made by known methods obvious to someone skilled in the art.

Compounds of formula A, wherein Z_1 is sulfur and Z_2 is oxygen, can be made from compounds of formula D, wherein Z_1 is oxygen and R is OH or C_1-C_4alkoxy, by treatment with a thio-transfer reagent such as Lawessen's reagent or phosphorus pentasulfide prior to coupling with the amine of formula NHR_3R_4.

Alternatively, compounds of formula D, wherein R is OH and Z_1 is oxygen, may be dehydrated to benzoxazinones of formula B by treatment with a dehydrating agent such as acetic anhydride.



Alternatively, compounds of formula A, wherein Z_1 and Z_2 are oxygen, may be made by the treatment of compounds of formula G, wherein Z_2 is oxygen, with a carboxylic acid of formula R_1-COOH or an acid chloride of formula R_1-COCl as previously described. Compounds of formula G, wherein Z_2 is oxygen, may be formed from compounds of formula H, wherein P is a suitable protecting group and R is OH, Cl or C_1-C_4alkoxy, by amide bond formation with an amine of formula NHR_2R_3 as previously described for compounds of formula D, followed by removal of the protecting group P under standard conditions. Compounds of formula H, wherein R is OH or C_1-C_4alkoxy, may be made by the protection of the amine functionality in compounds of formula E, wherein R is OH or C_1-C_4alkoxy. Suitable protecting groups include carbamates (such as t-butyloxycarbonyl, allyloxycarbonyl and benzyloxycarbonyl), trialkylsilyl groups (such as t-butydimethylsilyl) and acyl groups (such as acetyl). The formation and removal of such groups is widely reported in the literature and is well known to a person skilled in the art.

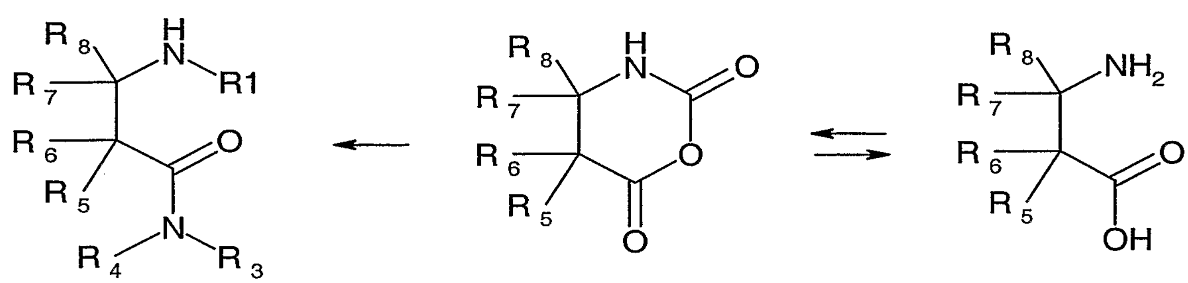
For compounds of formula H and compounds of formula E, the esters (wherein R is C_1-C_4alkoxy) may be hydrolysed to the acids (wherein R is OH) by treatment with an alkali such as sodium hydroxide in a solvent such as ethanol. The acids (wherein R is OH) may be converted to the acid chlorides (wherein R is Cl) by treatment with thionyl chloride or oxalyl chloride as previously described for compounds of formula D.

Alternatively, it may be possible to convert compounds of formula E, wherein R is OH, Cl or C_1-C_4alkoxy, directly to compounds of formula G by amide bond formation with an amine of

formula NHR_3R_4 under standard conditions (as previously described for compounds of formula D).

Alternatively, compounds of formula G, wherein Z_2 is oxygen, may be made from compounds of formula JK, wherein Z_2 is oxygen and LG is a leaving group such as fluoro, chloro or sulfonate, by displacement of the leaving group with a compound of formula R_2NH_2. Such reactions are usually performed under basic conditions. Such compounds of formula JK may be made from compounds of formula J, wherein R is Cl or OH and LG is a leaving group as previously described, via amide bond formation under standard conditions as previously described. Such compounds of formula J and formula E are either known compounds or may be made by known methods by someone skilled in the art.

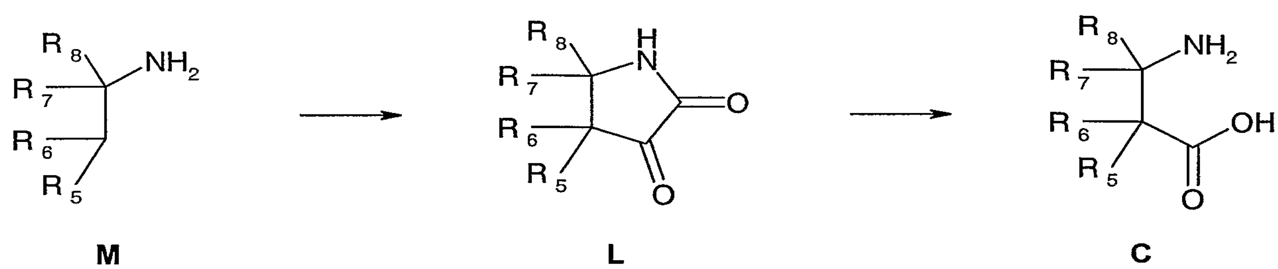
Compounds of formula A, wherein Z_1 is oxygen and Z_2 is sulfur, may be made by treatment of compounds of formula JK, wherein Z_2 is oxygen and LG is a leaving group, or compounds of formula G, wherein $Z_2$2 is oxygen, with a thio-transfer reagent such as Lawesson's reagent or phosphorus pentasulfide prior to elaborating to compounds of formula A, wherein Z_1 is oxygen and Z_2 is sulfur, as previously described for compounds of formula A, wherein Z_1 is oxygen and Z_2 is oxygen).



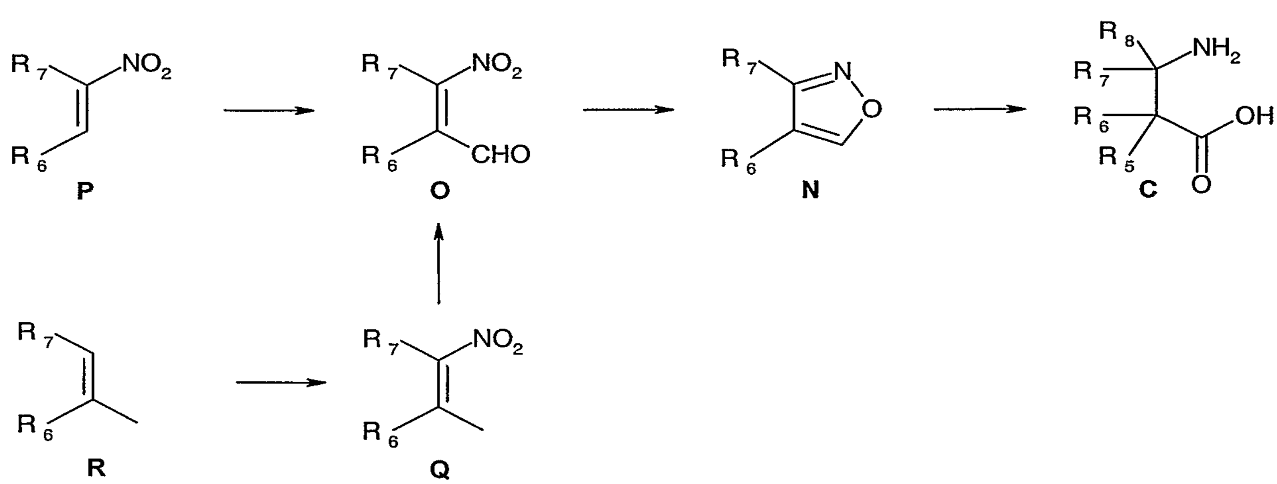
G K C

Compounds of formula C are either known or may be made by methods known to a person skilled in the art. For instance, amino acids of formula C may be formed by hydrolysis of isatoic anhydrides of formula K. Alternatively, isatoic anhydrides of formula K may be reacted with amines of formula NHR_3R_4 to give compounds of formula G, wherein R_1 is H, directly. Isatoic anhydrides of formula K are either known compounds or may be made by known methods obvious to those skilled in the art, for instance they made be derived from treatment

of amino acids of formula C with phosgene or a synthetic equivalent of phosgene (for example carbonyl diimidazole).

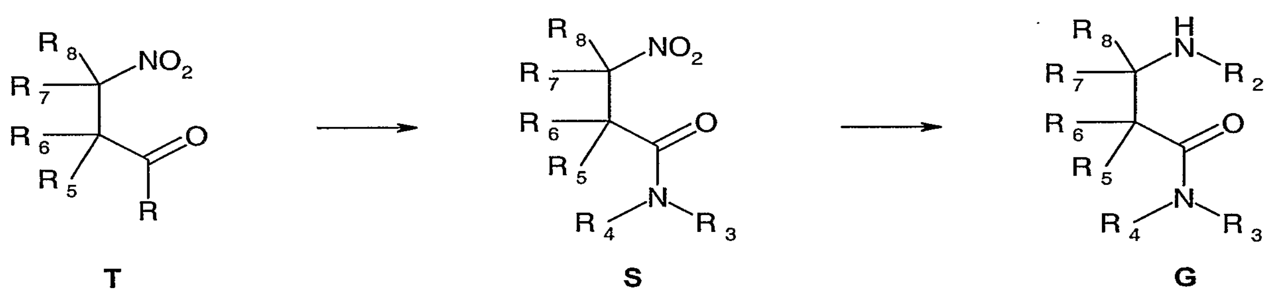


Alternatively, compounds of formula C may be derived from the treatment of an isatin of formula L with hydrogen peroxide under basic conditions. Isatins of formula L are either known or may be made by methods known to persons skilled in the art, for example they may be derived from amino compounds of formula M, wherein R_5 and R_8 taken together form an additional bond between the carbon atoms bearing substituents R_6 and R_7, by treatment for example with oxalyl chloride (optionally in the presence of a Lewis acid catalyst) or chloral hydrate under various conditions. Amino compounds of formula M are either known compounds or may be made by known methods obvious to those skilled in the art.



Alternatively, compounds of formula C, wherein R_5 and R_8 taken together form an additional bond between the carbon atoms bearing substituents R_6 and R_7, may be derived from the treatment of an isoxazole of formula N with aqueous base. Isoxazoles of formula N may be

derived from nitroaldehydes of formula O by treatment with a reducing agent such as zinc in acetic acid. Nitroaldehydes of formula O are either known or may be made by methods known to persons skilled in the art, for instance they may be derived from nitro compounds of formula P by treatment with chloroform under basic conditions followed by treatment with strong aqueous acid. Alternatively, nitroaldehydes of formula O may be derived from oxidation of 1-nitro-2-methyl aromatic compounds of formula Q. A particularly convenient method of achieving such an oxidation involves treating the compound Q with dimethylformamide dimethylacetal under basic conditions followed by treatment with sodium periodate. Compounds of formula P and Q are either known or may be made by methods known to those skilled in the art, for instance compounds of formula Q may be synthesised from compounds of formula R by nitration (e.g. with a mixture of nitric acid and sulphuric acid).



An alternative synthesis of compounds of formula G, wherein R_2 is hydrogen, may be achieved by the reduction of nitro compounds of formula S. There are numerous methods for achieving such a transformation reported in the literature such as treatment with tin or iron under acidic conditions, or hydrogenation catalysed by a noble metal such as palladium on carbon. Compounds of formula S may be derived from compounds of formula T, wherein R is OH, Cl, or C_1-C_4alkoxy, via acylation with an amine of formula NHR_3R_4 under the standard conditions already described for a compound of formula D. Similarly conversion of esters of formula T, wherein R is C_1-C_4alkoxy, to acids of formula T, wherein R is OH, to acid chlorides of formula T, wherein R is Cl, is also described for compounds of formula D. Compounds of formula T are either known or may be made by methods known to persons skilled in the art.

It must be recognised that some reagents and reaction conditions may not be compatible with certain functionalities that may be present in the molecules described. In such cases it

may be necessary to employ standard protection/deprotection protocols comprehensively reported in the literature and well known to a person skilled in the art.

Also in some cases it may be necessary to perform further routine synthetic steps not described herein to complete the synthesis of the desired compounds. An artisan will also recognise that it may be possible to achieve the synthesis of the desired compounds by performing some of the steps in these synthetic routes in a different order to that described.

A person skilled in the art will also recognise that it may be possible to perform standard functional group interconversions or substitution reactions on the compounds described herein to introduce or modify existing substituents.

The reactants can preferably be reacted in the presence of a base. Examples of suitable bases are alkali metal or alkaline earth metal hydroxides, alkali metal or alkaline earth metal hydrides, alkali metal or alkaline earth metal amides, alkali metal or alkaline earth metal alkoxides, alkali metal or alkaline earth metal acetates, alkali metal or alkaline earth metal carbonates, alkali metal or alkaline earth metal dialkylamides or alkali metal or alkaline earth metal alkylsilylamides, alkylamines, alkylenediamines, free or N-alkylated saturated or unsaturated cycloalkylamines, basic heterocycles, ammonium hydroxides and carbocyclic amines. Examples which may be mentioned are sodium hydroxide, sodium hydride, sodium amide, sodium methoxide, sodium acetate, sodium carbonate, potassium tert-butoxide, potassium hydroxide, potassium carbonate, potassium hydride, lithium diisopropylamide, potassium bis(trimethylsilyl)amide, calcium hydride, triethylamine, diisopropylethylamine, triethylenediamine, cyclohexylamine, N-cyclohexyl-N,N-dimethylamine, N,N-diethylaniline, pyridine, 4-(N,N-dimethylamino)pyridine, quinuclidine, N-methylmorpholine, benzyltrimethylammonium hydroxide and 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU).

The reactions are advantageously carried out in a temperature range from approximately -80°C to approximately +140°C, preferably from approximately -30°C to approximately +100°C, in many cases in the range between room temperature and approximately +80°C.

The compounds of formula B, D and of formula A, wherein Z_2 is sulfur (compounds of formula AA) and, where appropriate, the tautomers thereof, in each case in free form or in salt form, are novel and are also subjects of the invention.

Salts of compounds of formula I can be prepared in a manner known per se. Thus, for example, acid addition salts of compounds of formula I are obtained by treatment with a suitable acid or a suitable ion exchanger reagent and salts with bases are obtained by treatment with a suitable base or with a suitable ion exchanger reagent.

Salts of compounds of formula I can be converted in the customary manner into the free compounds of formula I, acid addition salts, for example, by treatment with a suitable basic compound or with a suitable ion exchanger reagent and salts with bases, for example, by treatment with a suitable acid or with a suitable ion exchanger reagent.

Salts of compounds of formula I can be converted in a manner known per se into other salts of compounds of formula I, acid addition salts, for example, into other acid addition salts, for example by treatment of a salt of inorganic acid such as hydrochloride with a suitable metal salt such as a sodium, barium or silver salt, of an acid, for example with silver acetate, in a suitable solvent in which an inorganic salt which forms, for example silver chloride, is insoluble and thus precipitates from the reaction mixture.

Depending on the procedure or the reaction conditions, the compounds of formula I, which have salt-forming properties can be obtained in free form or in the form of salts.

The compounds of formula I and, where appropriate, the tautomers thereof, in each case in free form or in salt form, can be present in the form of one of the isomers which are possible or as a mixture of these, for example in the form of pure isomers, such as antipodes and/or diastereomers, or as isomer mixtures, such as enantiomer mixtures, for example racemates, diastereomer mixtures or racemate mixtures, depending on the number, absolute and relative configuration of asymmetric carbon atoms which occur in the molecule and/or depending on the configuration of non-aromatic double bonds which occur in the molecule; the invention relates to the pure isomers and also to all isomer mixtures which are possible and is to be understood in each case in this sense hereinabove and hereinbelow, even when stereochemical details are not mentioned specifically in each case.

Diastereomer mixtures or racemate mixtures of compounds of formula I, in free form or in salt form, which can be obtained depending on which starting materials and procedures have

been chosen can be separated in a known manner into the pure diasteromers or racemates on the basis of the physicochemical differences of the components, for example by fractional crystallization, distillation and/or chromatography.

Enantiomer mixtures, such as racemates, which can be obtained in a similar manner can be resolved into the optical antipodes by known methods, for example by recrystallization from an optically active solvent, by chromatography on chiral adsorbents, for example high-performance liquid chromatography (HPLC) on acetyl celulose, with the aid of suitable microorganisms, by cleavage with specific, immobilized enzymes, via the formation of inclusion compounds, for example using chiral crown ethers, where only one enantiomer is complexed, or by conversion into diastereomeric salts, for example by reacting a basic end-product racemate with an optically active acid, such as a carboxylic acid, for example camphor, tartaric or malic acid, or sulfonic acid, for example camphorsulfonic acid, and separating the diastereomer mixture which can be obtained in this manner, for example by fractional crystallization based on their differing solubilities, to give the diastereomers, from which the desired enantiomer can be set free by the action of suitable agents, for example basic agents.

Pure diastereomers or enantiomers can be obtained according to the invention not only by separating suitable isomer mixtures, but also by generally known methods of diastereoselective or enantioselective synthesis, for example by carrying out the process according to the invention with starting materials of a suitable stereochemistry.

It is advantageous to isolate or synthesize in each case the biologically more effective isomer, for example enantiomer or diastereomer, or isomer mixture, for example enantiomer mixture or diastereomer mixture, if the individual components have a different biological activity.

The compounds of formula I and, where appropriate, the tautomers thereof, in each case in free form or in salt form, can, if appropriate, also be obtained in the form of hydrates and/or include other solvents, for example those which may have been used for the crystallization of compounds which are present in solid form.

The invention relates to all those embodiments of the process by which, starting from a compound obtainable at any level of the process as starting material or intermediate, all or

some of the missing steps are carried out or a starting material is used in the form of a derivative and/or salt and/or racemates or antipodes thereof or, in particular, is formed under the reaction conditions.

Those starting materials and intermediates, in each case in free form or in salt form, which lead to the compounds of formula I or salts thereof which have been described at the outset as being particularly valuable are preferably used in the process of the present invention.

In particular, the invention relates to the preparation processes described in the Examples P1 to P11.

Starting materials and intermediates, in each case in free form or salt form, which are used in accordance with the invention for the preparation of the compounds of formula I or salts thereof and which are novel, a process for their preparation, and their use as starting materials and intermediates for the preparation of the compounds of formula I are also a subject of the invention; in particular, this applies to the compounds of formula II, IV and V.

The compounds of formula I according to the invention are preventively and/or curatively valuable active ingredients in the field of pest control, even at low rates of application, which have a very favorable biocidal spectrum and are well tolerated by warm-blooded species, fish and plants. The active ingredients according to the invention act against all or individual developmental stages of normally sensitive, but also resistant, animal pests, such as insects or representatives of the order Acarina. The insecticidal or acaricidal activity of the active ingredients according to the invention can manifest itself directly, i. e. in destruction of the pests, which takes place either immediately or only after some time has elapsed, for example during ecdysis, or indirectly, for example in a reduced oviposition and/or hatching rate, a good activity corresponding to a destruction rate (mortality) of at least 50 to 60%.

Examples of the abovementioned animal pests are:
from the order *Acarina*, for example,
Acarus siro, Aceria sheldoni, Aculus schlechtendali, Amblyomma spp., Argas spp., Boophilus spp., Brevipalpus spp., Bryobia praetiosa, Calipitrimerus spp., Chorioptes spp., Dermanyssus gallinae, Eotetranychus carpini, Eriophyes spp., Hyalomma spp., Ixodes spp., Olygonychus pratensis, Ornithodoros spp., Panonychus spp., Phyllocoptruta oleivora, Polypha-

gotarsonemus latus, Psoroptes spp., Rhipicephalus spp., Rhizoglyphus spp., Sarcoptes spp., Tarsonemus spp. and Tetranychus spp.;

from the order *Anoplura*, for example,

Haematopinus spp., Linognathus spp., Pediculus spp., Pemphigus spp. and Phylloxera spp.;

from the order *Coleoptera*, for example,

Agriotes spp., Anthonomus spp., Atomaria linearis, Chaetocnema tibialis, Cosmopolites spp., Curculio spp., Dermestes spp., Diabrotica spp., Epilachna spp., Eremnus spp., Leptinotarsa decemlineata, Lissorhoptrus spp., Melolontha spp., Orycaephilus spp., Otiorhynchus spp., Phlyctinus spp., Popillia spp., Psylliodes spp., Rhizopertha spp., Scarabeidae, Sitophilus spp., Sitotroga spp., Tenebrio spp., Tribolium spp. and Trogoderma spp.;

from the order *Diptera,* for example,

Aedes spp., Antherigona soccata, Bibio hortulanus, Calliphora erythrocephala, Ceratitis spp., Chrysomyia spp., Culex spp., Cuterebra spp., Dacus spp., Drosophila melanogaster, Fannia spp., Gastrophilus spp., Glossina spp., Hypoderma spp., Hyppobosca spp., Liriomyza spp., Lucilia spp., Melanagromyza spp., Musca spp., Oestrus spp., Orseolia spp., Oscinella frit, Pegomyia hyoscyami, Phorbia spp., Rhagoletis pomonella, Sciara spp., Stomoxys spp., Tabanus spp., Tannia spp. and Tipula spp.;

from the order *Heteroptera,* for example,

Cimex spp., Distantiella theobroma, Dysdercus spp., Euchistus spp., Eurygaster spp., Leptocorisa spp., Nezara spp., Piesma spp., Rhodnius spp., Sahlbergella singularis, Scotinophara spp. and Triatoma spp.;

from the order *Homoptera*, for example,

Aleurothrixus floccosus, Aleyrodes brassicae, Aonidiella spp., Aphididae, Aphis spp., Aspidiotus spp., Bemisia tabaci, Ceroplaster spp., Chrysomphalus aonidium, Chrysomphalus dictyospermi, Coccus hesperidum, Empoasca spp., Eriosoma larigerum, Erythroneura spp., Gascardia spp., Laodelphax spp., Lecanium corni, Lepidosaphes spp., Macrosiphus spp., Myzus spp., Nephotettix spp., Nilaparvata spp., Parlatoria spp., Pemphigus spp., Planococcus spp., Pseudaulacaspis spp., Pseudococcus spp., Psylla spp., Pulvinaria aethiopica, Quadraspidiotus spp., Rhopalosiphum spp., Saissetia spp., Scaphoideus spp., Schizaphis spp., Sitobion spp., Trialeurodes vaporariorum, Trioza erytreae and Unaspis citri;

from the order *Hymenoptera*, for example,

Acromyrmex, Atta spp., Cephus spp., Diprion spp., Diprionidae, Gilpinia polytoma, Hoplocampa spp., Lasius spp., Monomorium pharaonis, Neodiprion spp., Solenopsis spp. and Vespa spp.;

from the order *Isoptera*, for example,
Reticulitermes spp.;
from the order *Lepidoptera*, for example,
Acleris spp., Adoxophyes spp., Aegeria spp., Agrotis spp., Alabama argillaceae, Amylois spp., Anticarsia gemmatalis, Archips spp., Argyrotaenia spp., Autographa spp., Busseola fusca, Cadra cautella, Carposina nipponensis, Chilo spp., Choristoneura spp., Clysia ambiguella, Cnaphalocrocis spp., Cnephasia spp., Cochylis spp., Coleophora spp., Crocidolomia binotalis, Cryptophlebia leucotreta, Cydia spp., Diatraea spp., Diparopsis castanea, Earias spp., Ephestia spp., Eucosma spp., Eupoecilia ambiguella, Euproctis spp., Euxoa spp., Grapholita spp., Hedya nubiferana, Heliothis spp., Hellula undalis, Hyphantria cunea, Keiferia lycopersicella, Leucoptera scitella, Lithocollethis spp., Lobesia botrana, Lymantria spp., Lyonetia spp., Malacosoma spp., Mamestra brassicae, Manduca sexta, Operophtera spp., Ostrinia nubilalis, Pammene spp., Pandemis spp., Panolis flammea, Pectinophora gossypiela, Phthorimaea operculella, Pieris rapae, Pieris spp., Plutella xylostella, Prays spp., Scirpophaga spp., Sesamia spp., Sparganothis spp., Spodoptera spp., Synanthedon spp., Thaumetopoea spp., Tortrix spp., Trichoplusia ni and Yponomeuta spp.;
from the order *Mallophaga*, for example,
Damalinea spp. and Trichodectes spp.;
from the order *Orthoptera*, for example,
Blatta spp., Blattella spp., Gryllotalpa spp., Leucophaea maderae, Locusta spp., Periplaneta spp. and Schistocerca spp.;
from the order *Psocoptera*, for example,
Liposcelis spp.;
from the order *Siphonaptera*, for example,
Ceratophyllus spp., Ctenocephalides spp. and Xenopsylla cheopis;
from the order *Thysanoptera*, for example,
Frankliniella spp., Hercinothrips spp., Scirtothrips aurantii, Taeniothrips spp., Thrips palmi and Thrips tabaci; and
from the order *Thysanura*, for example,
Lepisma saccharina.

The active ingredients according to the invention can be used for controlling, i. e. containing or destroying, pests of the abovementioned type which occur in particular on plants, especially on useful plants and ornamentals in agriculture, in horticulture and in forests, or on or-

gans, such as fruits, flowers, foliage, stalks, tubers or roots, of such plants, and in some cases even plant organs which are formed at a later point in time remain protected against these pests.

Suitable target crops are, in particular, cereals, such as wheat, barley, rye, oats, rice, maize or sorghum; beet, such as sugar or fodder beet; fruit, for example pomaceous fruit, stone fruit or soft fruit, such as apples, pears, plums, peaches, almonds, cherries or berries, for example strawberries, raspberries or blackberries; leguminous crops, such as beans, lentils, peas or soya; oil crops, such as oilseed rape, mustard, poppies, olives, sunflowers, coconut, castor, cocoa or ground nuts; cucurbits, such as pumpkins, cucumbers or melons; fibre plants, such as cotton, flax, hemp or jute; citrus fruit, such as oranges, lemons, grapefruit or tangerines; vegetables, such as spinach, lettuce, asparagus, cabbages, carrots, onions, tomatoes, potatoes or bell peppers; Lauraceae, such as avocado, Cinnamonium or camphor; and also tobacco, nuts, coffee, eggplants, sugarcane, tea, pepper, grapevines, hops, the plantain family, latex plants and ornamentals.

The active ingredients according to the invention are especially suitable for controlling Aphis craccivora, Diabrotica balteata, Heliothis virescens, Myzus persicae, Plutella xylostella and Spodoptera littoralis in cotton, vegetable, maize, rice and soya crops.

The term "crops" is to be understood as including also crops that have been rendered tolerant to herbicides like bromoxynil or classes of herbicides (such as, for example, HPPD inhibitors, ALS inhibitors, for example primisulfuron, prosulfuron and trifloxysulfuron, EPSPS (5-enol-pyrovyl-shikimate-3-phosphate-synthase) inhibitors, GS (glutamine synthetase) inhibitors as a result of conventional methods of breeding or genetic engineering. An example of a crop that has been rendered tolerant to imidazolinones, e.g. imazamox, by conventional methods of breeding (mutagenesis) is Clearfield® summer rape (Canola). Examples of crops that have been rendered tolerant to herbicides or classes of herbicides by genetic engineering methods include glyphosate- and glufosinate-resistant maize varieties commercially available under the trade names RoundupReady® , Herculex I® and LibertyLink®.

The term "crops" is to be understood as including also crop plants which have been so transformed by the use of recombinant DNA techniques that they are capable of synthesising one or more selectively acting toxins, such as are known, for example, from toxin-producing bacteria, especially those of the genus Bacillus.

Toxins that can be expressed by such transgenic plants include, for example, insecticidal proteins, for example insecticidal proteins from Bacillus cereus or Bacillus popliae; or insecticidal proteins from Bacillus thuringiensis, such as δ-endotoxins, e.g. CryIA(b), CryIA(c), CryIF, CryIF(a2), CryIIA(b), CryIIIA, CryIIIB(b1) or Cry9c, or vegetative insecticidal proteins (VIP), e.g. VIP1, VIP2, VIP3 or VIP3A; or insecticidal proteins of bacteria colonising nematodes, for example Photorhabdus spp. or Xenorhabdus spp., such as Photorhabdus luminescens, Xenorhabdus nematophilus; toxins produced by animals, such as scorpion toxins, arachnid toxins, wasp toxins and other insect-specific neurotoxins; toxins produced by fungi, such as Streptomycetes toxins, plant lectins, such as pea lectins, barley lectins or snowdrop lectins; agglutinins; proteinase inhibitors, such as trypsine inhibitors, serine protease inhibitors, patatin, cystatin, papain inhibitors; ribosome-inactivating proteins (RIP), such as ricin, maize-RIP, abrin, luffin, saporin or bryodin; steroid metabolism enzymes, such as 3-hydroxysteroidoxidase, ecdysteroid-UDP-glycosyl-transferase, cholesterol oxidases, ecdysone inhibitors, HMG-COA-reductase, ion channel blockers, such as blockers of sodium or calcium channels, juvenile hormone esterase, diuretic hormone receptors, stilbene synthase, bibenzyl synthase, chitinases and glucanases.

In the context of the present invention there are to be understood by δ-endotoxins, for example CryIA(b), CryIA(c), CryIF, CryIF(a2), CryIIA(b), CryIIIA, CryIIIB(b1) or Cry9c, or vegetative insecticidal proteins (VIP), for example VIP1, VIP2, VIP3 or VIP3A, expressly also hybrid toxins, truncated toxins and modified toxins. Hybrid toxins are produced recombinantly by a new combination of different domains of those proteins (see, for example, WO 02/15701). In the case of modified toxins, one or more amino acids of the naturally occurring toxin are replaced. In such amino acid replacements, preferably non-naturally present protease recognition sequences are inserted into the toxin, such as, for example, in the case of CryIIIA055, a cathepsin-D-recognition sequence is inserted into a CryIIIA toxin (see WO 03/018810).

Examples of such toxins or transgenic plants capable of synthesising such toxins are disclosed, for example, in EP-A-0 374 753, WO 93/07278, WO 95/34656, EP-A-0 427 529, EP-A-451 878 and WO 03/052073.

The processes for the preparation of such transgenic plants are generally known to the person skilled in the art and are described, for example, in the publications mentioned above. CryI-type deoxyribonucleic acids and their preparation are known, for example, from WO 95/34656, EP-A-0 367 474, EP-A-0 401 979 and WO 90/13651.

The toxin contained in the transgenic plants imparts to the plants tolerance to harmful insects. Such insects can occur in any taxonomic group of insects, but are especially commonly found in the beetles (Coleoptera), two-winged insects (Diptera) and butterflies (Lepidoptera).

Transgenic plants containing one or more genes that code for an insecticidal resistance and express one or more toxins are known and some of them are commercially available. Examples of such plants are: YieldGard® (maize variety that expresses a CryIA(b) toxin); YieldGard Rootworm® (maize variety that expresses a CryIIIB(b1) toxin); YieldGard Plus® (maize variety that expresses a CryIA(b) and a CryIIIB(b1) toxin); Starlink® (maize variety that expresses a Cry9(c) toxin); Herculex I® (maize variety that expresses a CryIF(a2) toxin and the enzyme phosphinothricine N-acetyltransferase (PAT) to achieve tolerance to the herbicide glufosinate ammonium); NuCOTN 33B® (cotton variety that expresses a CryIA(c) toxin); Bollgard I® (cotton variety that expresses a CryIA(c) toxin); Bollgard II® (cotton variety that expresses a CryIA(c) and a CryIIA(b) toxin); VIPCOT® (cotton variety that expresses a VIP toxin); NewLeaf® (potato variety that expresses a CryIIIA toxin); Nature-Gard® and Protecta®.

Further examples of such transgenic crops are:

1. **Bt11 Maize** from Syngenta Seeds SAS, Chemin de l'Hobit 27, F-31 790 St. Sauveur, France, registration number C/FR/96/05/10. Genetically modified *Zea mays* which has been rendered resistant to attack by the European corn borer (*Ostrinia nubilalis* and *Sesamia nonagrioides*) by transgenic expression of a truncated CryIA(b) toxin. Bt11 maize also

transgenically expresses the enzyme PAT to achieve tolerance to the herbicide glufosinate ammonium.

2. **Bt176 Maize** from Syngenta Seeds SAS, Chemin de l'Hobit 27, F-31 790 St. Sauveur, France, registration number C/FR/96/05/10. Genetically modified *Zea mays* which has been rendered resistant to attack by the European corn borer (*Ostrinia nubilalis* and *Sesamia nonagrioides*) by transgenic expression of a CryIA(b) toxin.

3. **MIR604 Maize** from Syngenta Seeds SAS, Chemin de l'Hobit 27, F-31 790 St. Sauveur, France, registration number C/FR/96/05/10. Maize which has been rendered insect-resistant by transgenic expression of a modified CryIIIA toxin. This toxin is Cry3A055 modified by insertion of a cathepsin-D-protease recognition sequence. The preparation of such transgenic maize plants is described in WO 03/018810.

4. **MON 863 Maize** from Monsanto Europe S.A. 270-272 Avenue de Tervuren, B-1150 Brussels, Belgium, registration number C/DE/02/9. MON *863* expresses a CryIIIB(b1) toxin and has resistance to certain Coleoptera insects.

5. **IPC 531 Cotton** from Monsanto Europe S.A. 270-272 Avenue de Tervuren, B-1150 Brussels, Belgium, registration number C/ES/96/02.

6. **1507 Maize** from Pioneer Overseas Corporation, Avenue Tedesco, 7 B-1160 Brussels, Belgium, registration number C/NL/00/10. Genetically modified maize for the expression of the protein Cry1F for achieving resistance to certain Lepidoptera insects and of the PAT protein for achieving tolerance to the herbicide glufosinate ammonium.

7. **NK603 × MON 810 Maize** from Monsanto Europe S.A. 270-272 Avenue de Tervuren, B-1150 Brussels, Belgium, registration number C/GB/02/M3/03. Consists of conventionally bred hybrid maize varieties by crossing the genetically modified varieties NK603 and MON 810. NK603 × MON 810 Maize transgenically expresses the protein CP4 EPSPS, obtained from *Agrobacterium sp.* strain CP4, which imparts tolerance to the herbicide Roundup® (contains glyphosate), and also a CryIA(b) toxin obtained from *Bacillus thuringiensis subsp. kurstaki* which brings about tolerance to certain Lepidoptera, include the European corn borer.

Transgenic crops of insect-resistant plants are also described in BATS (Zentrum für Biosicherheit und Nachhaltigkeit, Zentrum BATS, Clarastrasse 13, 4058 Basel, Switzerland) Report 2003, (http://bats.ch).

The term "crops" is to be understood as including also crop plants which have been so transformed by the use of recombinant DNA techniques that they are capable of synthesising antipathogenic substances having a selective action, such as, for example, the so-called "pathogenesis-related proteins" (PRPs, see e.g. EP-A-0 392 225). Examples of such antipathogenic substances and transgenic plants capable of synthesising such antipathogenic substances are known, for example, from EP-A-0 392 225, WO 95/33818, and EP-A-0 353 191. The methods of producing such transgenic plants are generally known to the person skilled in the art and are described, for example, in the publications mentioned above.

Antipathogenic substances which can be expressed by such transgenic plants include, for example, ion channel blockers, such as blockers for sodium and calcium channels, for example the viral KP1, KP4 or KP6 toxins; stilbene synthases; bibenzyl synthases; chitinases; glucanases; the so-called "pathogenesis-related proteins" (PRPs; see e.g. EP-A-0 392 225); antipathogenic substances produced by microorganisms, for example peptide antibiotics or heterocyclic antibiotics (see e.g. WO 95/33818) or protein or polypeptide factors involved in plant pathogen defence (so-called "plant disease resistance genes", as described in WO 03/000906).

Other fields of application of the active ingredients according to the invention are the protection of stored products and stores and of material, such as wood, textiles, floor coverings or buildings, and, in the hygiene sector, particularly the protection of humans, domestic animals and productive livestock against pests of the abovementioned type.

The invention therefore also relates to pesticidal compositions such as emulsifiable concentrates, suspension concentrates, directly sprayable or dilutable solutions, spreadable pastes, dilute emulsions, soluble powders, dispersible powders, wettable powders, dusts, granules or encapsulations in polymeric substances, which comprise - at least - one of the active ingredients according to the invention and which are to be selected to suit the intended aims and the prevailing circumstances.

In these compositions, the active ingredient is employed in pure form, a solid active ingredient for example in a specific particle size, or, preferably, together with - at least - one of the auxiliaries conventionally used in the art of formulation, such as extenders, for example solvents or solid carriers, or such as surface-active compounds (surfactants).

Examples of suitable solvents are: unhydrogenated or partially hydrogenated aromatic hydrocarbons, preferably the fractions C_8 to C_{12} of alkylbenzenes, such as xylene mixtures, alkylated naphthalenes or tetrahydronaphthalene, aliphatic or cycloaliphatic hydrocarbons, such as paraffins or cyclohexane, alcohols such as ethanol, propanol or butanol, glycols and their ethers and esters such as propylene glycol, dipropylene glycol ether, ethylene glycol or ethylene glycol monomethyl ether or ethylene glycol monoethyl ether, ketones, such as cyclohexanone, isophorone or diacetone alcohol, strongly polar solvents, such as N-methylpyrrolid-2-one, dimethyl sulfoxide or N,N-dimethylformamide, water, unepoxidized or epoxidized vegetable oils, such as unexpodized or epoxidized rapeseed, castor, coconut or soya oil, and silicone oils.

Solid carriers which are used for example for dusts and dispersible powders are, as a rule, ground natural minerals such as calcite, talc, kaolin, montmorillonite or attapulgite. To improve the physical properties, it is also possible to add highly disperse silicas or highly disperse absorbtive polymers. Suitable particulate adsorptive carriers for granules are porous types, such as pumice, brick grit, sepiolite or bentonite, and suitable non-sorptive carrier materials are calcite or sand. In addition, a large number of granulated materials of inorganic or organic nature can be used, in particular dolomite or comminuted plant residues.

Suitable surface-active compounds are, depending on the type of the active ingredient to be formulated, non-ionic, cationic and/or anionic surfactants or surfactant mixtures which have good emulsifying, dispersing and wetting properties. The surfactants mentioned below are only to be considered as examples; a large number of further surfactants which are conventionally used in the art of formulation and suitable according to the invention are described in the relevant literature.

Suitable non-ionic surfactants are, especially, polyglycol ether derivatives of aliphatic or cycloaliphatic alcohols, of saturated or unsaturated fatty acids or of alkyl phenols which may

contain approximately 3 to approximately 30 glycol ether groups and approximately 8 to approximately 20 carbon atoms in the (cyclo)aliphatic hydrocarbon radical or approximately 6 to approximately 18 carbon atoms in the alkyl moiety of the alkyl phenols. Also suitable are water-soluble polyethylene oxide adducts with polypropylene glycol, ethylenediaminopolypropylene glycol or alkyl polypropylene glycol having 1 to approximately 10 carbon atoms in the alkyl chain and approximately 20 to approximately 250 ethylene glycol ether groups and approximately 10 to approximately 100 propylene glycol ether groups. Normally, the abovementioned compounds contain 1 to approximately 5 ethylene glycol units per propylene glycol unit. Examples which may be mentioned are nonylphenoxypolyethoxyethanol, castor oil polyglycol ether, polypropylene glycol/polyethylene oxide adducts, tributylphenoxypolyethoxyethanol, polyethylene glycol or octylphenoxypolyethoxyethanol. Also suitable are fatty acid esters of polyoxyethylene sorbitan, such as polyoxyethylene sorbitan trioleate.

The cationic surfactants are, especially, quarternary ammonium salts which generally have at least one alkyl radical of approximately 8 to approximately 22 C atoms as substituents and as further substituents (unhalogenated or halogenated) lower alkyl or hydroxyalkyl or benzyl radicals. The salts are preferably in the form of halides, methylsulfates or ethylsulfates. Examples are stearyltrimethylammonium chloride and benzylbis(2-chloroethyl)ethylammonium bromide.

Examples of suitable anionic surfactants are water-soluble soaps or water-soluble synthetic surface-active compounds. Examples of suitable soaps are the alkali, alkaline earth or (unsubstituted or substituted) ammonium salts of fatty acids having approximately 10 to approximately 22 C atoms, such as the sodium or potassium salts of oleic or stearic acid, or of natural fatty acid mixtures which are obtainable for example from coconut or tall oil; mention must also be made of the fatty acid methyl taurates. However, synthetic surfactants are used more frequently, in particular fatty sulfonates, fatty sulfates, sulfonated benzimidazole derivatives or alkylaryl sulfonates. As a rule, the fatty sulfonates and fatty sulfates are present as alkali, alkaline earth or (substituted or unsubstituted) ammonium salts and they generally have an alkyl radical of approximately 8 to approximately 22 C atoms, alkyl also to be understood as including the alkyl moiety of acyl radicals; examples which may be mentioned are the sodium or calcium salts of lignosulfonic acid, of the dodecylsulfuric ester or of a fatty alcohol sulfate mixture prepared from natural fatty acids. This group also includes the salts of the sulfuric esters and sulfonic acids of fatty alcohol/ethylene oxide adducts. The

sulfonated benzimidazole derivatives preferably contain 2 sulfonyl groups and a fatty acid radical of approximately 8 to approximately 22 C atoms. Examples of alkylarylsulfonates are the sodium, calcium or triethanolammonium salts of decylbenzenesulfonic acid, of dibutylnaphthalenesulfonic acid or of a naphthalenesulfonic acid/formaldehyde condensate. Also possible are, furthermore, suitable phosphates, such as salts of the phosphoric ester of a p-nonylphenol/(4-14)ethylene oxide adduct, or phospholipids.

As a rule, the compositions comprise from 0.0001 to 99.9999 %, in particular 0.1 to 95 %, of active ingredient, and 0.0001 to 99.9999 %, in particular 5 to 99.9 %, of - at least - one solid or liquid auxiliary, it being possible, as a rule, for 0 to 25 %, in particular 0.1 to 20 %, of the compositions to be surfactants (% in each case is per cent by weight). While concentrated compositions are more preferred as commercially available goods, the end user uses, as a rule, dilute compositions which have considerably lower concentrations of active ingredient.

The activity of the compositions according to the invention can be broadened considerably, and adapted to prevailing circumstances, by adding other insecticidally or acaricidally active ingredients. Suitable additions to active ingredients here are, for example, representatives of the following classes of active ingredients: organophosphorus compounds, nitrophenol derivatives, thioureas, juvenile hormones, formamidines, benzophenone derivatives, ureas, pyrrole derivatives, carbamates, pyrethroids, chlorinated hydrocarbons, acylureas, pyridylmethyleneamino derivatives, macrolides, neonicotinoids and Bacillus thuringiensis preparations.

Examples of especially suitable mixing partners include compounds selected from the following group M:

<u>Group M: especially suitable mixing partners for the compounds of formula I:</u>
azamethiphos; chlorfenvinphos; cypermethrin, cypermethrin high-cis; cyromazine; diafenthiuron; diazinon; dichlorvos; dicrotophos; dicyclanil; fenoxycarb; fluazuron; furathiocarb; isazofos; iodfenphos; kinoprene; lufenuron; methacriphos; methidathion; monocrotophos; phosphamidon; profenofos; diofenolan; a compound obtainable from the Bacillus thuringiensis strain GC91 or from strain NCTC11821; pymetrozine; bromopropylate; methoprene; disulfoton; quinalphos; tau-fluvalinate; thiocyclam; thiometon; aldicarb; azinphos-methyl; benfuracarb; bifenthrin; buprofezin; carbofuran; dibutylaminothio; cartap;

chlorfluazuron; chlorpyrifos; cyfluthrin; lambda-cyhalothrin; alpha-cypermethrin; zeta-cypermethrin; deltamethrin; diflubenzuron; endosulfan; ethiofencarb; fenitrothion; fenobucarb; fenvalerate; formothion; methiocarb; heptenophos; imidacloprid; thiamethoxam; clothianidin; isoprocarb; methamidophos; methomyl; mevinphos; parathion; parathion-methyl; phosalone; pirimicarb; propoxur; teflubenzuron; terbufos; triazamate; fenobucarb; tebufenozide; fipronil; beta-cyfluthrin; silafluofen; fenpyroximate; pyridaben; fenazaquin; pyriproxyfen; pyrimidifen; nitenpyram; acetamiprid; emamectin; emamectin-benzoate; spinosad; a plant extract that is active against insects; a preparation that comprises nematodes and is active against insects; a preparation obtainable from Bacillus subtilis; a preparation that comprises fungi and is active against insects; a preparation that comprises viruses and is active against insects; chlorfenapyr; acephate; acrinathrin; alanycarb; alphamethrin; amitraz; AZ 60541; azinphos A; azinphos M; azocyclotin; bendiocarb; bensultap; beta-cyfluthrin; BPMC; brofenprox; bromophos A; bufencarb; butocarboxin; butylpyridaben; cadusafos; carbaryl; carbophenothion; chloethocarb; chlorethoxyfos; chlormephos; cis-resmethrin; clocythrin; clofentezine; cyanophos; cycloprothrin; cyhexatin; demeton M; demeton S; demeton-S-methyl; dichlofenthion; dicliphos; diethion; dimethoate; dimethylvinphos; dioxathion; edifenphos; esfenvalerate; ethion; ethofenprox; ethoprophos; etrimphos; fenamiphos; fenbutatin oxide; fenothiocarb; fenpropathrin; fenpyrad; fenthion; fluazinam; flucycloxuron; flucythrinate; flufenoxuron; flufenprox; fonophos; fosthiazate; fubfenprox; HCH; hexaflumuron; hexythiazox; IKI-220; iprobenfos; isofenphos; isoxathion; ivermectin; malathion; mecarbam; mesulfenphos; metaldehyde; metolcarb; milbemectin; moxidectin; naled; NC 184; omethoate; oxamyl; oxydemethon M; oxydeprofos; permethrin; phenthoate; phorate; phosmet; phoxim; pirimiphos M; pirimiphos E; promecarb; propaphos; prothiofos; prothoate; pyrachlophos; pyradaphenthion; pyresmethrin; pyrethrum; tebufenozide; salithion; sebufos; sulfotep; sulprofos; tebufenpyrad; tebupirimphos; tefluthrin; temephos; terbam; tetrachlorvinphos; thiacloprid; thiafenox; thiodicarb; thiofanox; thionazin; thuringiensin; tralomethrin; triarathene; triazophos; triazuron; trichlorfon; triflumuron; trimethacarb; vamidothion; xylylcarb; YI 5301/5302; zetamethrin; DPX-MP062 — indoxacarb; methoxyfenozide; bifenazate; XMC (3,5-xylyl methylcarbamate); or the fungus pathogen Metarhizium anisopliae.

The following mixtures of the compounds of formula I with one member of the group M are preferred (in the following listing, “M” means one member selected from the group M.)

T1.1 + M; T38.3 + M; T37.3 + M; T20.1 + M; T1.3 + M; T1.121 + M; T2.1 + M; T2.3 + M; T6.1 + M; T6.3 + M; T7.1 + M; T7.3 + M; T21.3 + M; T22.3 + M; T46.1 + M; T46.3 + M; T50.1 + M; T50.3 + M; T51.1 + M; T51.3 + M; T52.1 + M; T52.3 + M; T53.1 + M; T53.3 + M; T72.1 + M; T72.3 + M; T72.207 + M; T72.273 + M; T73.1 + M; T73.3 + M; T73.207 + M; T73.273 + M; T74.1 + M; T74.3 + M; T75.1 + M; T75.3 + M; T76.1 + M; T76.3 + M; T77.1 + M; T77.3 + M; T78.1 + M; T78.3 + M; T79.1 + M; T80.3 + M; T81.1 + M; T81.3 + M; T82.1 + M; T83.3 + M; T84.3 + M and T85.3 + M; P2.001 + M; P2.002 + M; P2.003 + M; P2.004 + M; P2.005 + M; P2.006 + M; P2.007 + M; P2.008 + M; P2.009 + M; P2.010 + M; P2.011 + M; P2.012 + M; P2.013 + M; P2.014 + M; P2.015 + M; P2.016 + M; P2.017 + M; P2.018 + M; P2.019 + M; P2.020 + M; P2.021 + M; P2.022 + M; P2.023 + M; P2.024 + M; P2.025 + M; P2.026 + M; P2.027 + M; P2.028 + M; P2.029 + M; P2.030 + M; P2.031 + M; P2.032 + M; P2.033 + M; P2.034 + M; P2.035 + M; P2.036 + M; P2.037 + M; P2.038 + M; P2.039 + M; P2.040 + M; P2.041 + M; P2.042 + M; P2.043 + M; P2.044 + M; P2.045 + M; P2.046 + M; P2.047 + M; P2.048 + M; P2.049 + M; P2.050 + M; P2.051 + M; P2.052 + M; P2.053 + M; P2.054 + M; P2.055 + M; P2.056 + M; P2.057 + M; P2.058 + M; P2.059 + M; P2.060 + M; P2.061 + M; P2.062 + M; P2.063 + M; P2.064 + M; P2.065 + M; P2.066 + M; P2.067 + M; P2.068 + M; P2.069 + M; P2.070 + M; P2.071 + M; P2.072 + M; P2.073 + M; P2.074 + M; P2.075 + M; P2.076 + M; P2.077 + M; P2.078 + M; P2.079 + M; P2.080 + M; P2.081 + M; P2.082 + M; P2.083 + M; P2.084 + M; P2.085 + M; P2.086 + M; P2.087 + M; P2.088 + M; P2.089 + M; P2.090 + M; P2.091 + M; P2.092 + M; P2.093 + M; P2.094 + M; P2.095 + M; P2.096 + M; P2.097 + M; P2.098 + M; P2.099 + M; P2.100 + M; P2.101 + M; P2.102 + M; P2.103 + M; P2.104 + M; P2.105 + M; P2.106 + M; P2.107 + M; P2.108 + M; P2.109 + M; P2.110 + M; P2.111 + M; P2.112 + M; P2.113 + M; P2.114 + M; P2.115 + M; P2.116 + M; P2.117 + M; P2.118 + M; P2.119 + M; P2.120 + M; P2.121 + M; P2.122 + M; P2.123 + M; P2.124 + M; P2.125 + M; P2.126 + M; P2.127 + M; P2.128 + M; P2.129 + M; P2.130 + M; P2.131 + M; P2.132 + M; P2.133 + M; P2.134 + M; P2.135 + M; P2.136 + M; P2.137 + M; P2.138 + M; P2.139 + M; P2.140 + M; P2.141 + M; P2.142 + M; P2.143 + M; P2.144 + M; P2.145 + M; P2.146 + M; P2.147 + M; P2.148 + M; P2.149 + M; P2.150 + M; P2.151 + M; P2.152 + M; P2.153 + M; P2.154 + M; P2.155 + M; P2.156 + M; P2.157 + M; P2.158 + M; P2.159 + M; P2.160 + M; P2.161 + M; P2.162 + M; P2.163 + M; P2.164 + M and P2.165 + M.

The compositions can also comprise further solid or liquid auxiliaries, such as stabilizers, for example unepoxidized or epoxidized vegetable oils (for example epoxidized coconut oil,

rapeseed oil or soya oil), antifoams, for example silicone oil, preservatives, viscosity regulators, binders and/or tackifiers, fertilizers or other active ingredients for achieving specific effects, for example bactericides, fungicides, nematocides, plant activators, molluscicides or herbicides.

The compositions according to the invention are prepared in a manner known per se, in the absence of auxiliaries for example by grinding, screening and/or compressing a solid active ingredient and in the presence of at least one auxiliary for example by intimately mixing and/or grinding the active ingredient with the auxiliary (auxiliaries). These processes for the preparation of the compositions and the use of the compounds of formula I for the preparation of these compositions are also a subject of the invention.

The application methods for the compositions, that is the methods of controlling pests of the abovementioned type, such as spraying, atomizing, dusting, brushing on, dressing, scattering or pouring - which are to be selected to suit the intended aims of the prevailing circumstances - and the use of the compositions for controlling pests of the abovementioned type are other subjects of the invention. Typical rates of concentration are between 0.1 and 1000 ppm, preferably between 0.1 and 500 ppm, of active ingredient. The rate of application per hectare is generally 1 to 2000 g of active ingredient per hectare, in particular 10 to 1000 g/ha, preferably 10 to 600 g/ha.

A preferred method of application in the field of crop protection is application to the foliage of the plants (foliar application), it being possible to select frequency and rate of application to match the danger of infestation with the pest in question. Alternatively, the active ingredient can reach the plants via the root system (systemic action), by drenching the locus of the plants with a liquid composition or by incorporating the active ingredient in solid form into the locus of the plants, for example into the soil, for example in the form of granules (soil application). In the case of paddy rice crops, such granules can be metered into the flooded paddy-field.

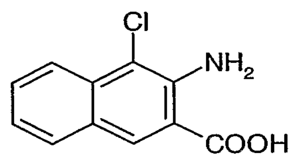
The compositions according to the invention are also suitable for the protection of plant propagation material, for example seeds, such as fruit, tubers or kernels, or nursery plants, against pests of the abovementioned type. The propagation material can be treated with the compositions prior to planting, for example seed can be treated prior to sowing. Alternatively,

the compositions can be applied to seed kernels (coating), either by soaking the kernels in a liquid composition or by applying a layer of a solid composition. It is also possible to apply the compositions when the propagation material is planted to the site of application, for example into the seed furrow during drilling. These treatment methods for plant propagation material and the plant propagation material thus treated are further subjects of the invention.

The examples which follow are intended to illustrate the invention. They do not limit the invention. Temperatures are given in degrees Celsius. The abbreviation "M. P." means "melting point".

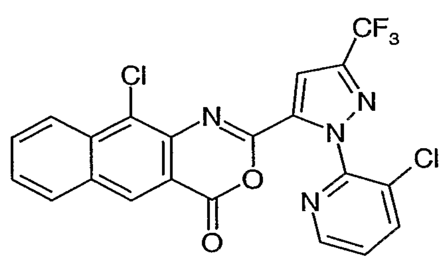
Preparation Examples

Example P1



1.9 g (14.7 mmol) of N-chlorosuccinimide and 10 mg of 2,2'-azoisobutyric nitrile are added to a suspension of 2.5 g (13.3 mmol) of 2-amino-3-carboxy-naphthalene in 100 ml of tetrachloromethane. The reaction mixture is stirred for 18 hours at room temperature, treated with 250 ml of aqueous sodium chloride solution and extracted with ethyl acetate (3 x 250 ml). The combined organic layers are dried over magnesium sulfate and filtered, and the filtrate is concentrated in vacuo. This gives the title compound in the form of a brown solid [^{1}H-NMR ($CDCl_3$): 8.53 (s, 1H), 7.98 (d, 1H), 7.73 (d, 1H), 7.55 (t, 1H), 7.25 (t, 1H)].

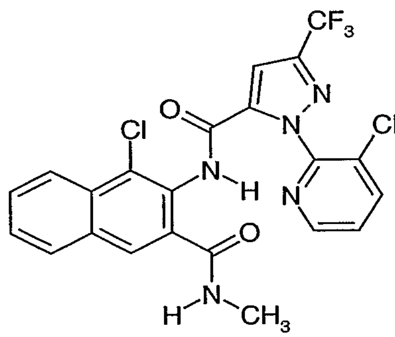
Example P2



In a nitrogen atmosphere 0.5 ml (5.75 mmol) of oxalyl chloride are added dropwise at room temperature with stirring to a suspension of 295 mg (1.0 mmol) of 5-carboxy-1-(3-chloropyrid-2-yl)-3-trifluoromethyl-pyrazole in 2 ml of dichloromethane. The reaction mixture

is stirred for 1 hour and then added dropwise to a solution of 0.25 g (1 mmol) of the title compound of Example P1 in a mixture of 20 ml of dichloromethane and 0.38 ml of triethylamine. The reaction mixture is subsequently stirred for 3 hours. Further 0.7 ml of triethylamine are added, followed by the addition of a single portion of 0.22 ml (2.8 mmol) of methane sulfonic acid chloride. The reaction mixture is then stirred for 18 hours and concentrated in vacuo, and the residue is purified by column chromatography [silica gel; hexane/ethyl acetate (3:1)], which gives the title compound [^{1}H-NMR ($CDCl_3$): 8.78 (s, 1H), 8.61 (m, 1H), 8.30 (m, 2H), 8.03 (dd, 1H), 7.78 (m, 1H), 7.67 (m, 1H), 7.56 (m, 2H); MS (electrospray): 477, 479, 481 ($(M+H)^+$)].

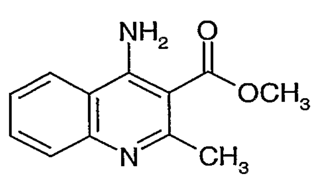
Example P3



(T1.1)

In a nitrogen atmosphere 1 ml of a solution (2.0 M) of methylamine in anhydrous tetrahydrofuran is added with stirring to a solution of 0.07 g (0.15 mmol) of the title compound of Example P2 in 5 ml of anhydrous tetrahydrofuran. The reaction mixture is heated to 50° for 1 hour, allowed to cool to room temperature and concentrated in vacuo, and the residue is purified by column chromatography [silica gel; hexane, followed by hexane/ethyl acetate (3:1)], which gives the title compound T1.1 [^{1}H-NMR (DMSO-d_6): 10.80 (s, 1H), 8.53 (d, 1H), 8.45 (br s, 1H), 8.21 (m, 2H), 8.08 (m, 2H), 7.87 (s, 1H), 7.78 (t, 1H), 7.70 (t, 1H), 7.64 (dd, 1H), 2.70 (d, 3H); MS (electrospray): 508, 510, 512 ($(M+H)^+$)].

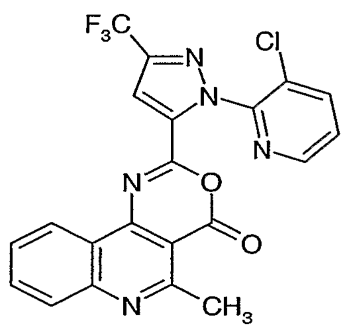
Example P4



0.91 ml (8.46 mmol) of methyl acetoacetate and 1.98 ml (16.9 mmol) of tin tetrachloride are added to a solution of 1 g (8.46 mmol) of 1-amino-2-cyano-benzene in 20 ml of toluene. The

reaction mixture is heated to reflux for 2 hours, allowed to cool to room temperature and concentrated in vacuo. The residue is suspended in 250 ml of aqueous sodium carbonate solution, and the suspension is stirred for 30 minutes, allowed to stand overnight and then extracted with ethyl acetate (3 x 250 ml). The combined organic layers are dried over magnesium sulfate and filtered, the filtrate is concentrated in vacuo, and the yellow solid residue is triturated with diethyl ether. This gives the title compound in the form of a yellow powder [^{1}H-NMR ($CDCl_3$): 7.88 (d, 1H), 7.77 (d, 1H), 7.68 (m, 1H), 7.43 (m, 1H), 7.06 (br s, 2H), 3.96 (s, 3H), 2.82 (s, 3H); MS (electrospray): 217 ($(M+H)^+$)].

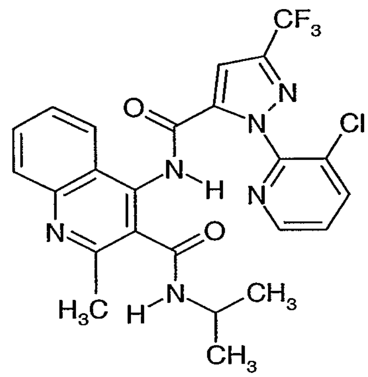
Example P5



In a nitrogen atmosphere 4 drops of N,N-dimethylformamide and then 0.08 ml (0.93 mmol) of oxalyl chloride are added dropwise at room temperature with stirring to a suspension of 250 mg (0.86 mmol) of 5-carboxy-1-(3-chloropyrid-2-yl)-3-trifluoromethyl-pyrazole in 10 ml of dichloromethane. The reaction mixture is stirred for 1 hour, the solvent is removed in vacuo, and the residue is co-evaporated three times with toluene and then suspended in 3 ml of toluene to give the suspension “A”. 105 mg (0.858 mmol) of 4-dimethylaminopyridine are added to a suspension of 185 mg (0.858 mmol) of the title compound of Example P4 in 3 ml of toluene to give the suspension “B”. The suspension “A” is added to the suspension “B”, for a complete transfer of the suspension “A” into the reaction flask the vessel containing the suspension “A” being rinsed out with a small amount of a mixture of toluene and a few drops of N,N-dimethylformamide. The reaction mixture is heated to reflux for 3 hours and then allowed to cool to room temperature. The yellow precipitate is filtered off and washed with diethyl ether. The filtrate is washed with 10 ml of water, and the water is back-extracted with ethyl acetate (2 x 50 ml). The combined organic layers are dried over magnesium sulfate and filtered, the filtrate is concentrated in vacuo, and the residue is purified by column chromatography [silica gel; hexane/ethyl acetate (1:2)], which gives the title compound [^{1}H-

NMR ($CDCl_3$): 8.66 (d, 1H), 8.09 (d, 1H), 8.03 (d, 1H), 7.86 (t, 1H), 7.67 (s, 1H), 7.67 (d, 1H), 7.45 (m, 1H), 7.40 (dd, 1H), 3.09 (s, 3H); MS (electrospray): 458 ($(M+H)^+$)].

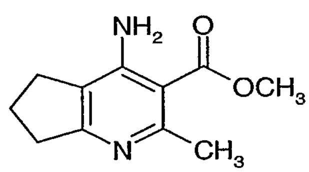
Example P6



(T38.3)

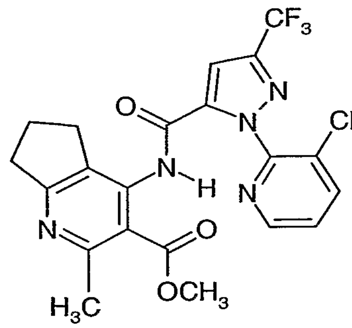
0.022 ml (0.262 mmol) of isopropylamine are added with stirring to a suspension of 40 mg (0.087 mmol) of the title compound of Example P5 in 1 ml of anhydrous tetrahydrofuran. The reaction mixture is heated to 60° for 90 minutes, allowed to cool to room temperature and concentrated in vacuo, and the residue is purified by column chromatography [silica gel; methanol/dichloromethane (1:9)], which gives the title compound T38.3 [^{1}H-NMR ($CDCl_3$): 11.17 (s, 1H), 8.42 (d, 1H), 8.09 (s, 1H), 7.81 (d, 1H), 7.71 (t, 1H), 7.70 (d, 1H), 7.60 (d, 1H), 7.48 (t, 1H), 7.36 (m, 1H), 6.31 (d, 1H), 4.23 (m, 1H), 2.30 (s, 3H), 1.16 (d, 6H); MS (electrospray): 517 ($(M+H)^+$)].

Example P7



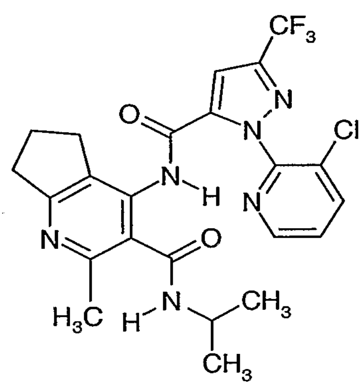
Starting from 1-amino-2-cyano-cyclopent-1-ene, the title compound can be prepared in a manner analogous to the procedure described in Example P4 [^{1}H-NMR ($CDCl_3$): 5.77 (br s, 2H), 3.90 (s, 3H), 2.97 (m, 2H), 2.70 (m, 2H), 2.15 (m, 2H); MS (electrospray): 207 ($(M+H)^+$)].

Example P8



In a nitrogen atmosphere 4 drops of N,N-dimethylformamide and then 0.16 ml (1.86 mmol) of oxalyl chloride are added dropwise at room temperature with stirring to a suspension of 0.5 g (1.72 mmol) of 5-carboxy-1-(3-chloropyrid-2-yl)-3-trifluoromethyl-pyrazole in 20 ml of dichloromethane. The reaction mixture is stirred for 90 minutes, the solvent is removed in vacuo, and the residue is co-evaporated three times with toluene and then dissolved in 10 ml of tetrahydrofuran to give the solution "A". 0.24 ml (1.72 mmol) of triethylamine are added to a suspension of 195 mg (0.95 mmol) of the title compound of Example P7 in 10 ml of tetrahydrofuran to give the suspension "B". 5 ml of the solution "A" are added in portions over a period of 30 minutes to the suspension "B". The reaction mixture is stirred for 2.5 hours, treated with 10 ml of aqueous sodium hydrogen carbonate solution and extracted with ethyl acetate (2 x 40 ml). The combined organic layers are dried over magnesium sulfate and filtered, the filtrate is concentrated in vacuo, and the residue is purified by column chromatography (silica gel; ethyl acetate), which gives the title compound [^{1}H-NMR ($CDCl_3$): 10.15 (s, 1H), 8.49 (d, 1H), 7.92 (d, 1H), 7.45 (m, 1H), 7.22 (s, 1H), 3.96 (s, 3H), 2.99 (m, 2H), 2.75 (m, 2H), 2.67 (s, 3H), 2.06 (m, 2H); MS (electrospray): 480 ($(M+H)^+$)].

Example P9



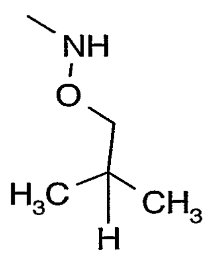
(T37.3)

0.04 ml (0.47 mmol) of isopropylamine are added at room temperature with stirring to a mixture of 0.24 ml of a solution (2.0 M) of trimethylaluminium in hexane and 3 ml of

dichloromethane. The reaction mixture is stirred for 40 minutes. A solution of 110 mg (0.22 mmol) of the title compound of Example P8 in 3 ml of dichloromethane is added, and the reaction mixture is heated to reflux for 6 hours, allowed to cool to room temperature and to stand overnight and then poured into 20 ml of water. The mixture is extracted with dichloromethane (2 x 30 ml). The combined organic layers are dried over magnesium sulfate and filtered, the filtrate is concentrated in vacuo, and the residue is purified by column chromatography [silica gel; ethyl acetate/hexane (2:1), followed by neat ethyl acetate], which gives the title compound T37.3 [^{1}H-NMR ($CDCl_3$): 10.69 (s, 1H), 8.49 (d, 1H), 7.88 (d, 1H), 7.70 (s, 1H), 7.42 (m, 1H), 5.89 (d, 1H), 4.24 (m, 1H), 2.87 (t, 2H), 2.57 (t, 2H), 2.49 (s, 3H), 2.02 (m, 2H), 1.19 (d, 6H); MS (electrospray): 507 ($(M+H)^+$)].

Example P10

The compounds listed in the Table P1 and P2 can be prepared in a manner analogous to the procedures described in the Examples P1 to P9. Melting points are given in °C. In the following structures, tertiary hydrogen atoms attached to carbon atoms are not drawn, e.g. the group



is drawn as follows:

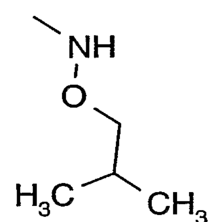
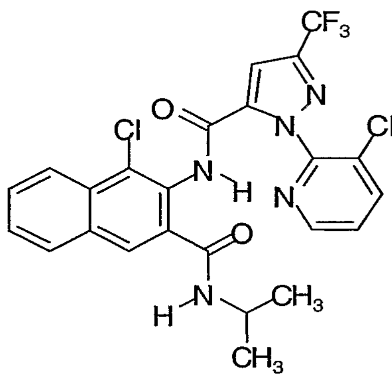
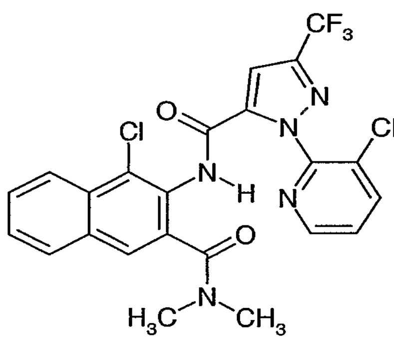
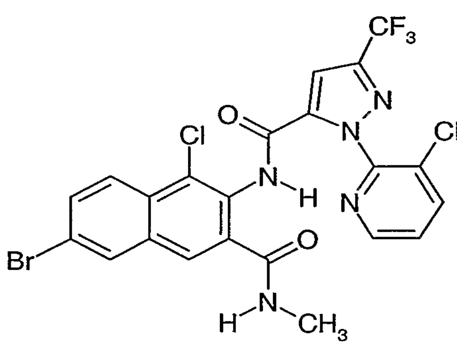
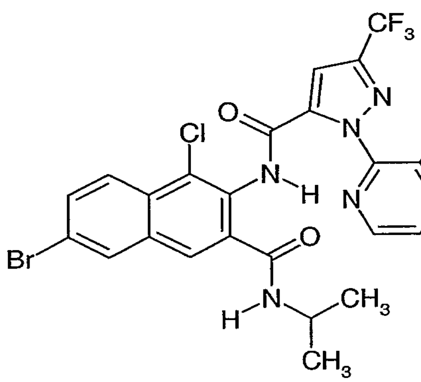
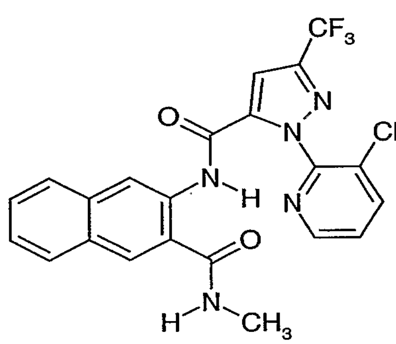
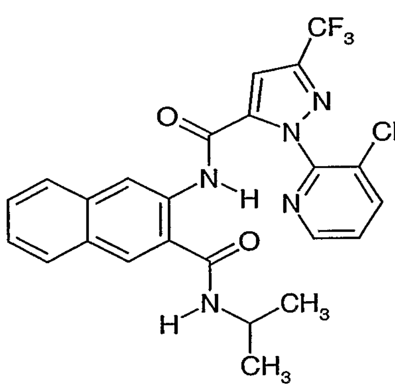
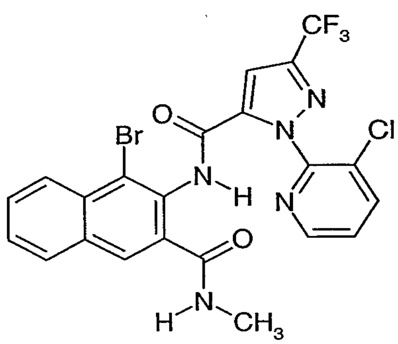
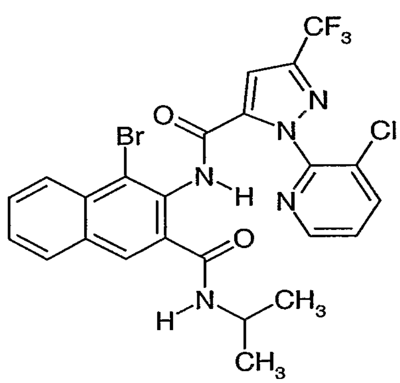
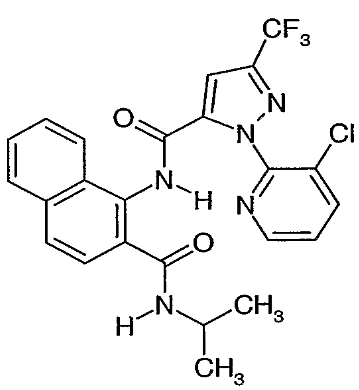


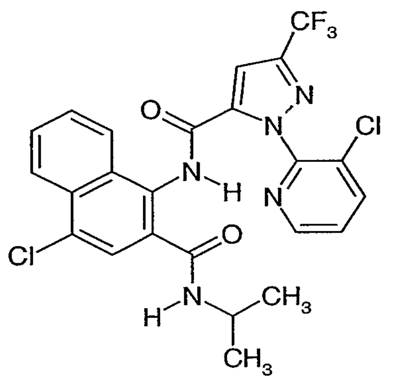
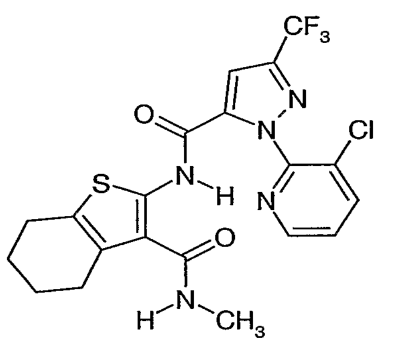
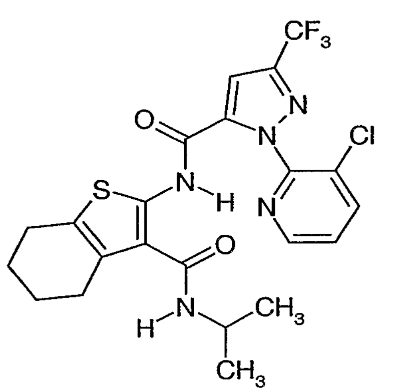
Table P1:

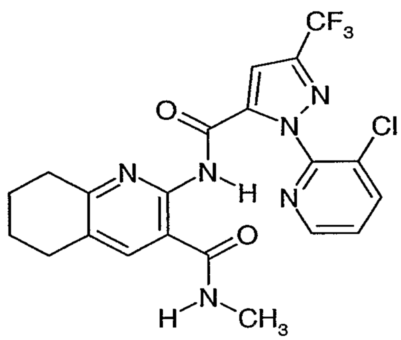
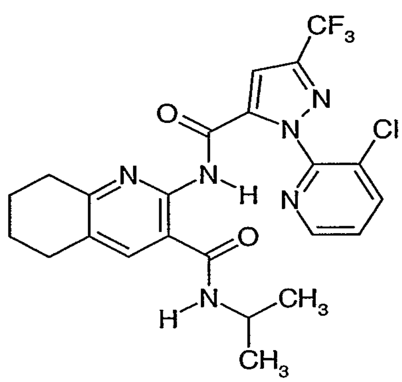
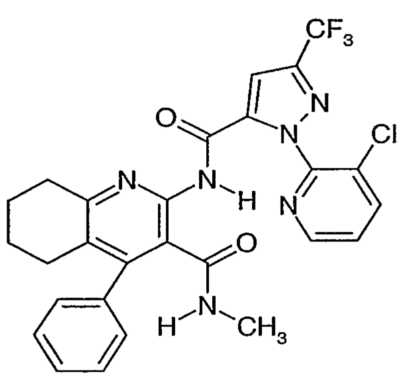
Compound	Structure	MS	^{1}H-NMR	M. P.

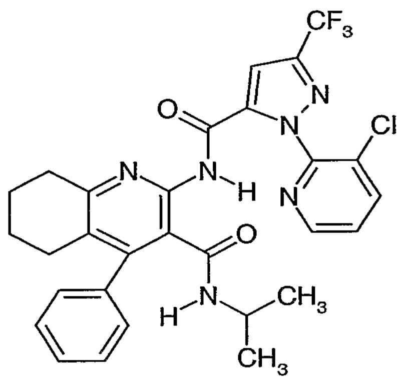
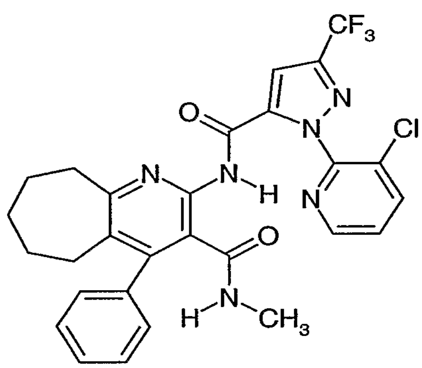
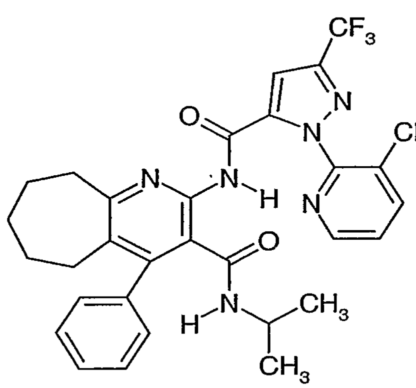
Compound Structure	MS	^{1}H-NMR	M. P.
T1.3 	Electrospray: 536, 538, 540 ((M+H)$^+$).	$CDCl_3$: 8.43 (d, 1H), 7.91 (s, 1H), 7.81 (d, 1H), 7.64 (s, 1H), 7.59 (t, 2H), 7.33 (m, 2H), 7.22 (m, 1H), 6.19 (d, 1H), 4.19 (m, 1H), 1.18 (d, 6H).	
T1.121 	Electrospray: 522, 524, 526 ((M+H)$^+$).	$CDCl_3$: 10.95 (s, 1H), 8.43 (dd, 1H), 8.01 (s, 1H), 7.82 (d, 1H), 7.64 (d, 1H), 7.52 (s, 1H), 7.35 (m, 3H), 7.16 (t, 1H), 2.77 (s, 3H), 2.71 (s, 3H).	
T2.1 	Electrospray: 584, 586, 588, 590 ((M-H)$^+$).	DMSO-d_6: 10.82 (s, 1H), 8.52 (dd, 1H), 8.47 (d, 1H), 8.40 (d, 1H), 8.20 (d, 1H), 8.14 (d, 1H), 8.05 (s, 1H), 7.89 (m, 1H), 7.87 (s, 1H), 7.64 (dd, 1H), 2.69 (d, 3H).	

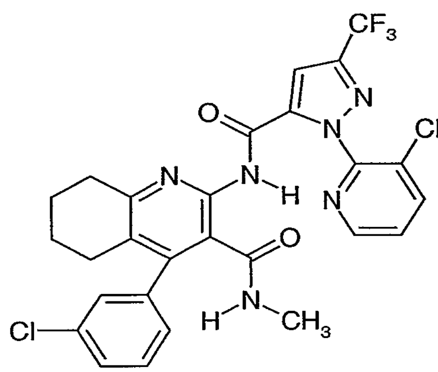
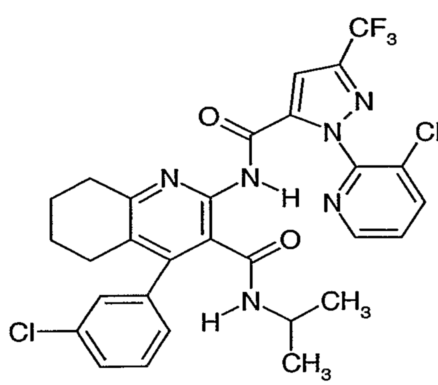
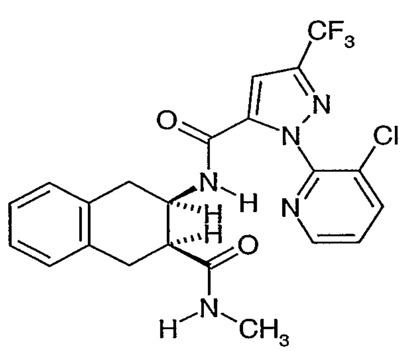
Compound Structure	MS	^{1}H-NMR	M. P.
T2.3 	Electrospray: 614, 616, 618 ((M+H)$^+$).	DMSO-d_6: 10.80 (s, 1H), 8.50 (dd, 1H), 8.42 (d, 1H), 8.32 (d, 1H), 8.19 (d, 1H), 8.14 (d, 1H), 8.01 (s, 1H), 7.89 (s, 1H), 7.88 (m, 1H), 7.63 (dd, 1H), 3.92 (m, 1H), 1.06 (d, 6H).	
T6.1 	Electrospray: 474, 476 ((M+H)$^+$).	DMSO-d_6: 12.75 (s, 1H), 9.13 (d, 1H), 8.69 (s, 1H), 8.60 (d, 1H), 8.44 (s, 1H), 8.31 (d, 1H), 7.91 (m, 2H), 7.74 (dd, 1H), 7.55 (m, 3H), 2.89 (d, 3H).	
T6.3 	Electrospray: 502, 504 ((M+H)$^+$).	DMSO-d_6: 12.55 (s, 1H), 8.90 (d, 1H), 8.62 (s, 1H), 8.59 (d, 1H), 8.43 (s, 1H), 8.31 (d, 1H), 7.94 (d, 1H), 7.90 (d, 1H), 7.73 (dd, 1H), 7.55 (m, 3H), 4.21 (m, 1H), 1.23 (d, 6H).	

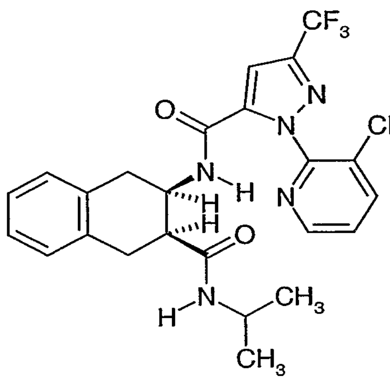
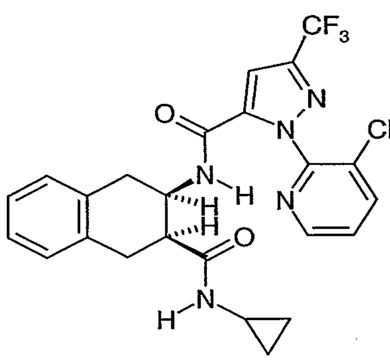
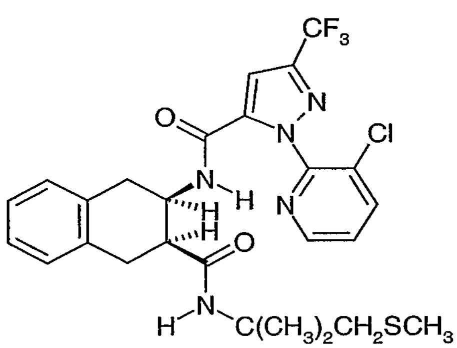
Compound Structure	MS	^{1}H-NMR	M. P.
T7.1 	Electrospray: 552, 554, 556 ((M+H)$^+$).	DMSO-d$_6$: 10.80 (s, 1H), 8.52 (d, 1H), 8.42 (s, 1H), 8.20 (m, 2H), 8.11 (s, 1H), 8.05 (d, 1H), 7.88 (s, 1H), 7.75 (t, 1H), 7.64 (m, 2H), 2.70 (d, 3H).	
T7.3 	Electrospray: 580, 582, 584 ((M+H)$^+$).	CDCl$_3$: 10.65 (s, 1H), 8.43 (d, 1H), 7.98 (s, 1H), 7.81 (d, 1H), 7.71 (s, 1H), 7.60 (d, 1H), 7.56 (d, 1H), 7.34 (m, 2H), 7.21 (t, 1H), 6.12 (d, 1H), 4.20 (m, 1H), 1.17 (d, 6H).	
T21.3 	Electrospray: 502, 504 ((M+H)$^+$).	CDCl$_3$: 10.97 (s, 1H), 8.46 (d, 1H), 7.84 (m, 2H), 7.75 (s, 1H), 7.72 (m, 1H), 7.49 (m, 2H), 7.37 (m, 2H), 7.11 (d, 1H), 6.15 (d, 1H), 4.23 (m, 1H), 1.19 (d, 6H).	

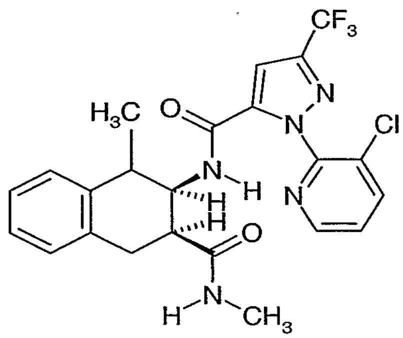
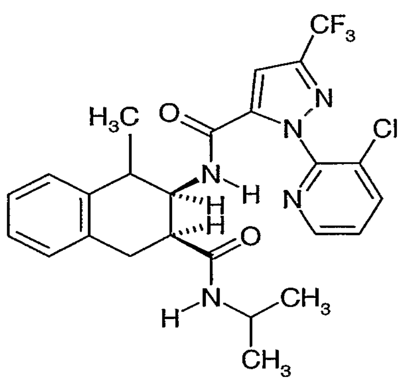
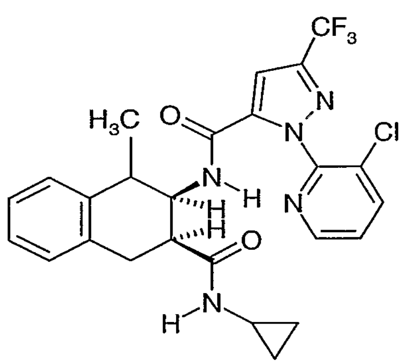
Compound Structure	MS	^{1}H-NMR	M. P.
T22.3 	Electrospray: 536, 538 ((M+H)$^+$).	$CDCl_3$: 11.00 (s, 1H), 8.43 (d, 1H), 7.96 (d, 1H), 7.87 (s, 1H), 7.81 (m, 2H), 7.58 (m, 2H), 7.36 (m, 1H), 7.05 (s, 1H), 6.12 (d, 1H), 4.20 (m, 1H), 1.20 (d, 6H).	
T46.1 			261 - 263
T46.3 			246 – 248

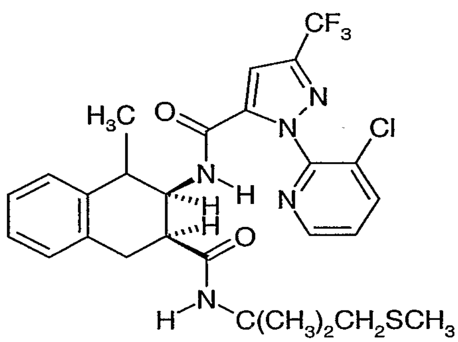
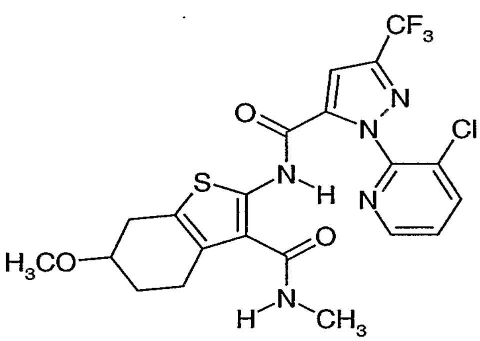
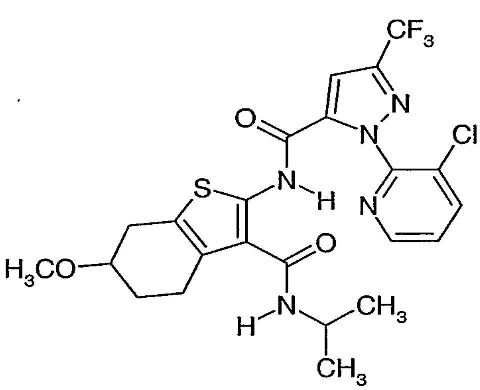
Compound Structure	MS	^{1}H-NMR	M. P.
T50.1 			145 – 147
T50.3 			143 – 145
T51.1 			165 – 168

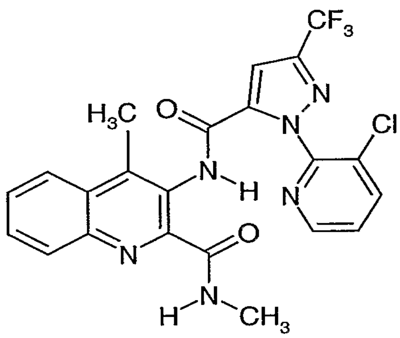
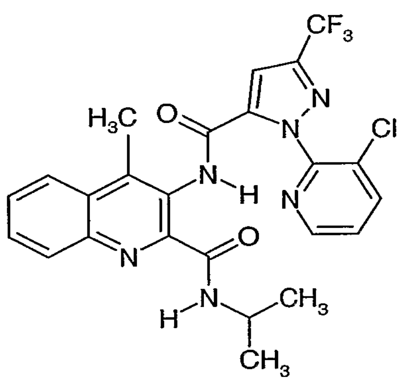
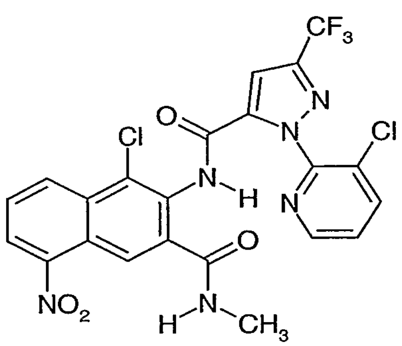
Compound Structure	MS	^{1}H-NMR	M. P.
T51.3 			146 – 148
T52.1 			211 - 213
T52.3 			269 - 270

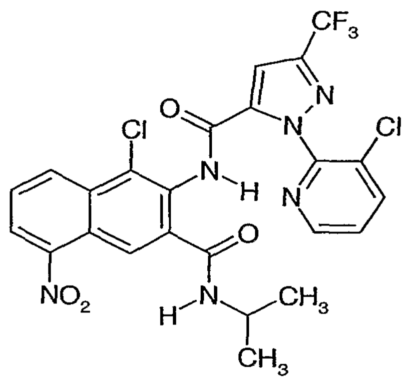
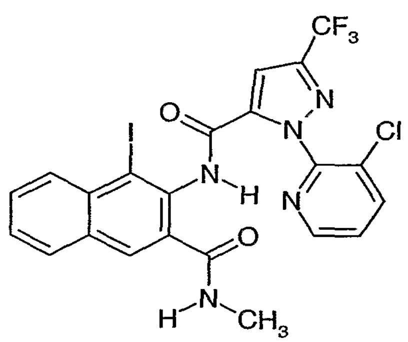
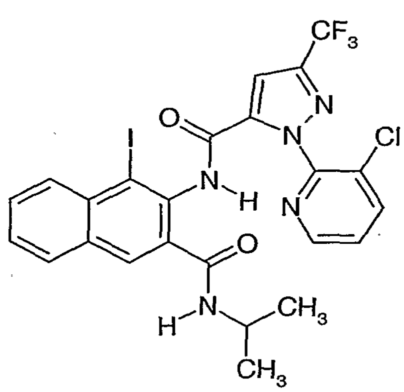
Compound Structure	MS	^{1}H-NMR	M. P.
T53.1 			183 - 185
T53.3 			259 - 260
T72.1 			226 – 228

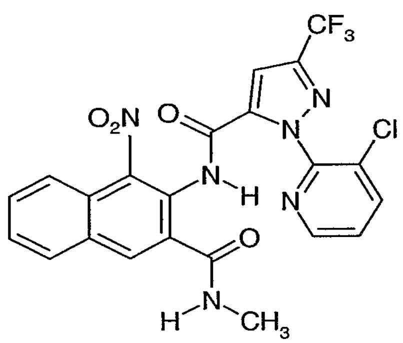
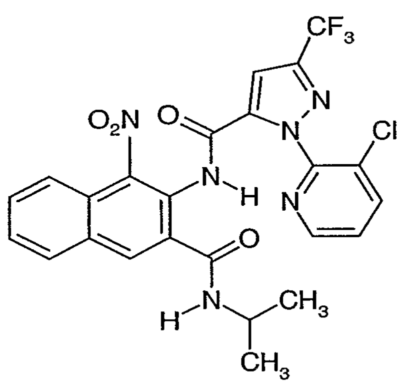
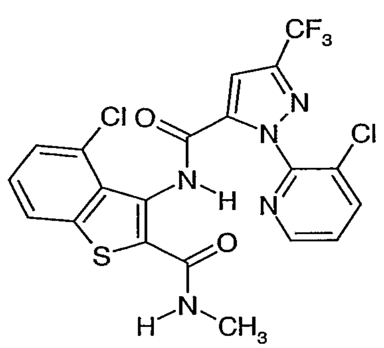
Compound Structure	MS	^{1}H-NMR	M. P.
T72.3 			229 – 232
T72.207 			230 – 233
T72.273 			184 – 186

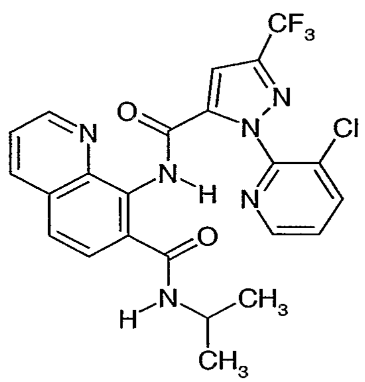
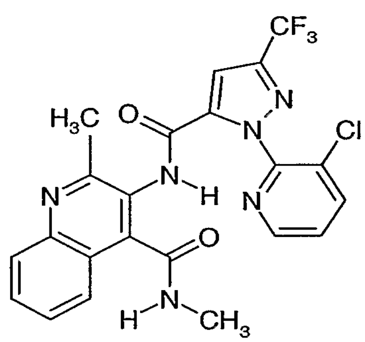
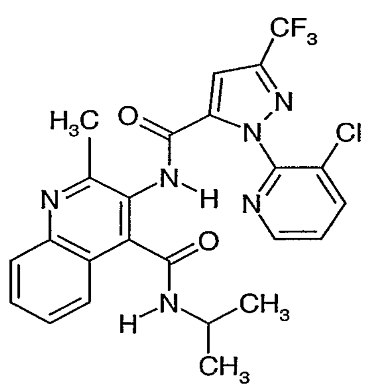
Compound Structure	MS	^{1}H-NMR	M. P.
T73.1 			205 - 207
T73.3 			223 - 225
T73.207 			192 – 194

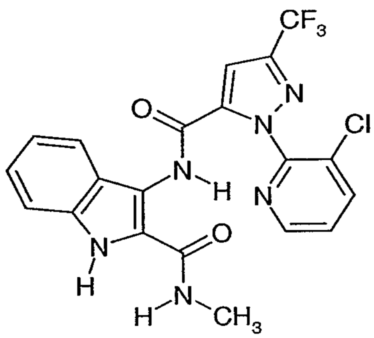
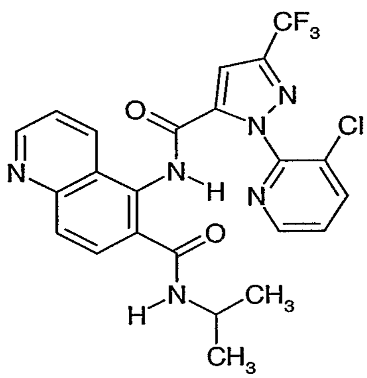
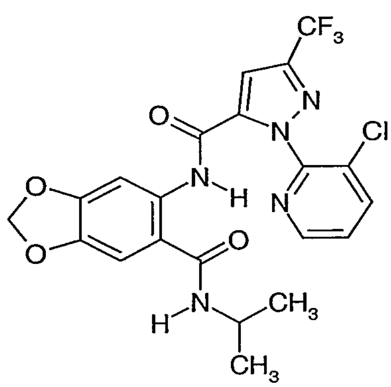
Compound Structure	MS	^{1}H-NMR	M. P.
T73.273 	Electrospray: 580 ($(M+H)^+$).		
T74.1 			133 - 135
T74.3 			206 - 207

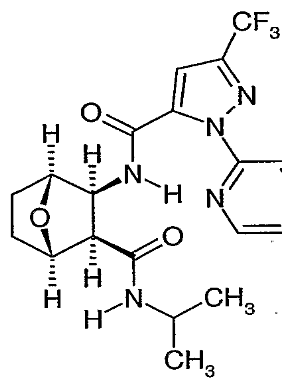
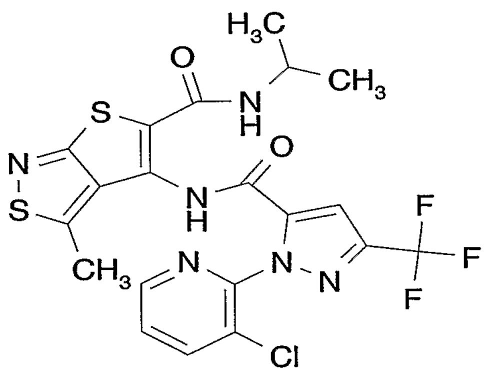
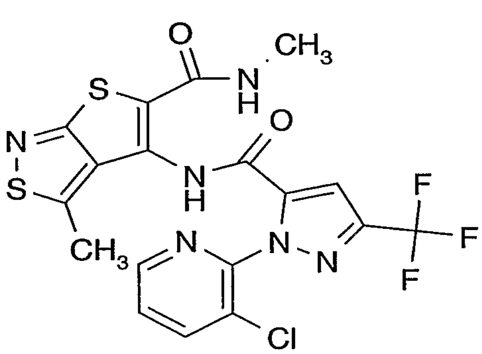
Compound Structure	MS	^{1}H-NMR	M. P.
T75.1 	Electrospray: 489 ((M+H)$^+$).	$CDCl_3$: 11.97 (s, 1H), 8.50 (br s, 1H), 8.49 (dd, 1H), 8.00 (d, 1H), 7.87 (dd, 1H), 7.69 (m, 1H), 7.61 (m, 1H), 7.45 (s, 1H), 7.41 (m, 1H), 3.09 (d, 3H), 2.52 (s, 3H).	
T75.3 	Electrospray: 517 ((M+H)$^+$).	$CDCl_3$: 12.06 (s, 1H), 8.49 (dd, 1H), 8.33 (m, 1H), 8.04 (d, 1H), 7.99 (d, 1H), 7.87 (dd, 1H), 7.69 (m, 1H), 7.61 (m, 1H), 7.44 (s, 1H), 7.41 (m, 1H), 4.30 (m, 1H), 2.52 (s, 3H), 1.35 (d, 6H).	
T76.1 		$CDCl_3$: 8.47 (d, 1H), 8.17 (s, 1H), 8.13 (d, 1H), 8.08 (m, 1H), 7.94 (d, 1H), 7.85 (d, 1H), 7.73 (s, 1H), 7.67 (m, 1H), 7.48 (m, 1H), 2.93 (d, 3H).	

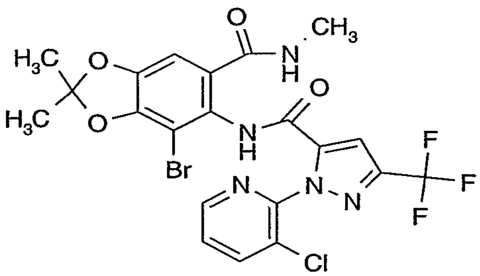
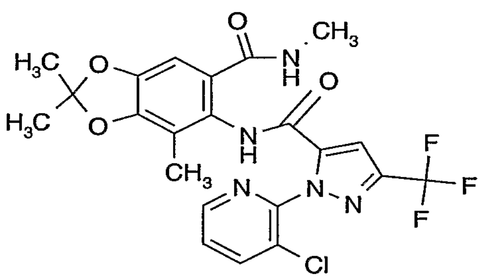
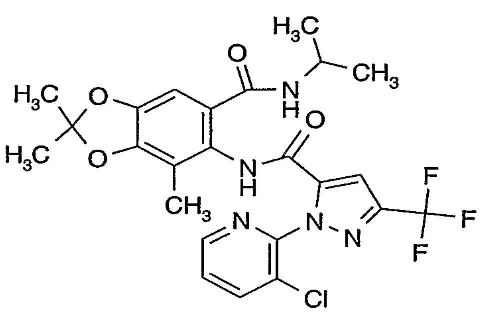
Compound Structure	MS	^{1}H-NMR	M. P.
T76.3 	Electrospray: 581 ((M+H)$^+$).	$CDCl_3$: 10.95 (s, 1H), 8.59 (d, 1H), 8.47 (dd, 1H), 8.39 (s, 1H), 8.33 (d, 1H), 8.30 (d, 1H), 8.04 (d, 1H), 7.89 (s, 1H), 7.84 (m, 1H), 7.56 (m, 1H), 4.02 (m, 1H), 1.11 (d, 6H).	
T77.1 	Electrospray: 600 ((M+H)$^+$).	$CDCl_3$: 10.29 (s, 1H), 8.47 (dd, 1H), 7.85 (dd, 1H), 7.81 (s, 1H), 7.71 (s, 1H), 7.70 (d, 1H), 7.63 (d, 1H), 7.40 (m, 1H), 7.38 (m, 1H), 7.33 (m, 1H), 6.26 (m, 1H), 2.96 (d, 3H).	
T77.3 	Electrospray: 628 ((M+H)$^+$).	$CDCl_3$: 10.61 (s, 1H), 8.45 (dd, 1H), 7.93 (s, 1H), 7.83 (dd, 1H), 7.78 (s, 1H), 7.57 (d, 1H), 7.36 (m, 2H), 7.24 (m, 1H), 6.10 (d, 1H), 4.20 (m, 1H), 1.16 (d, 6H).	

Compound Structure	MS	^{1}H-NMR	M. P.
T78.1 	Electrospray: 519 ((M+H)$^+$).	$CDCl_3$: 10.82 (br s, 1H), 8.50 (d, 1H), 8.05 (s, 1H), 7.93 (d, 1H), 7.84 (d, 1H), 7.79 (d, 1H), 7.65 (m, 1H), 7.52 (m, 1H), 7.45 (m, 1H), 7.28 (s, 1H), 6.58 (br s, 1H), 2.98 (d, 3H).	
T78.3 	Electrospray: 547 ((M+H)$^+$).	$CDCl_3$: 11.02 (br s, 1H), 8.47 (d, 1H), 8.07 (s, 1H), 7.88 (d, 1H), 7.82 (d, 1H), 7.73 (d, 1H), 7.59 (m, 1H), 7.53 (m, 1H), 7.48 (s, 1H), 7.40 (m, 1H), 6.20 (br s, 1H), 4.27 (m, 1H), 1.27 (d, 6H).	
T79.1 	Electrospray: 514 ((M+H)$^+$).	$CDCl_3$: 9.15 (s, 1H), 8.53 (dd, 1H), 8.22 (dd, 1H), 8.14 (d, 1H), 8.04 (d, 1H), 7.83 (s, 1H), 7.66 (m, 1H), 7.47 (m, 2H), 2.77 (s, 3H).	

Compound Structure	MS	^{1}H-NMR	M. P.
T80.3 	Electrospray: 503, 505 ((M+H)$^+$).	$CDCl_3$: 10.10 (s, 1H), 8.87 (d, 1H), 8.43 (d, 1H), 8.09 (d, 1H), 7.85 (d, 1H), 7.58 (m, 2H), 7.49 (m, 2H), 7.38 (m, 1H), 6.01 (d, 1H), 4.17 (m, 1H), 1.14 (d, 6H).	
T81.1 	Electrospray: 489 ((M+H)$^+$).	$CDCl_3$: 10.20 (s, 1H), 8.46 (d, 1H), 7.94 (d, 1H), 7.87 (d, 1H), 7.84 (s, 1H), 7.76 (t, 1H), 7.74 (d, 1H), 7.55 (t, 1H), 7.41 (m, 1H), 6.45 (m, 1H), 3.04 (d, 3H), 1.94 (s, 3H).	
T81.3 	Electrospray: 517 ((M+H)$^+$).	$CDCl_3$: 10.49 (s, 1H), 8.44 (d, 1H), 7.93 (d, 1H), 7.92 (s, 1H), 7.85 (d, 1H), 7.75 (t, 1H), 7.74 (d, 1H), 7.54 (t, 1H), 7.39 (m, 1H), 6.29 (d, 1H), 4.28 (m, 1H), 1.81 (s, 3H), 1.18 (d, 6H).	

Compound Structure	MS	^{1}H-NMR	M. P.
T82.1 	Electrospray: 463 ((M+H)$^+$).	DMSO-d$_6$: 11.58 (s, 1H), 10.65 (s, 1H), 8.57 (dd, 1H), 8.26 (dd, 1H), 7.87 (s, 1H), 7.84 (m, 1H), 7.68 (m, 1H), 7.44 (d, 1H), 7.40 (d, 1H), 7.21 (t, 1H), 7.03 (t, 1H), 2.82 (s, 3H).	
T83.3 	Electrospray: 503, 505 ((M+H)$^+$).	CDCl$_3$: 11.22 (s, 1H), 8.90 (m, 1H), 8.44 (d, 1H), 8.14 (d, 1H), 7.85 (d, 1H), 7.78 (s, 1H), 7.54 (d, 1H), 7.40 (m, 2H), 7.30 (d, 1H), 6.22 (d, 1H), 4.25 (m, 1H), 1.22 (d, 6H).	
T84.3 	Electrospray: 496, 498 ((M+H)$^+$).	DMSO-d$_6$: 13.48 (s, 1H), 8.54 (d, 1H), 8.10 (d, 1H), 8.02 (m, 2H), 7.56 (m, 1H), 7.46 (s, 1H), 7.29 (s, 1H), 6.00 (s, 2H), 4.28 (m, 1H), 1.26 (d, 6H).	

Compound Structure	MS	^{1}H-NMR	M. P.
T85.3 			220 – 224
T88.3 			261-263
T88.1 			264-266

Compound Structure	MS	^{1}H-NMR	M. P.
T89.1 			274-276
T90.1 			242-244
T90.3 			256-258

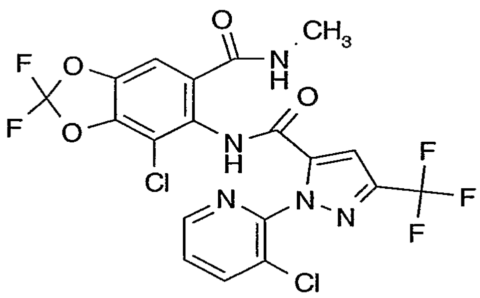
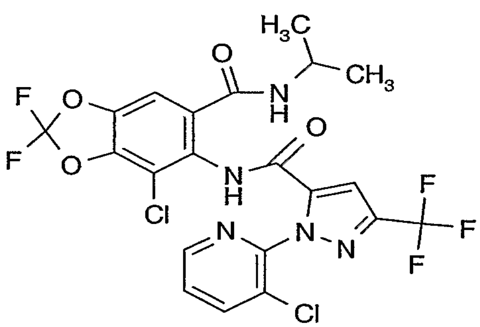
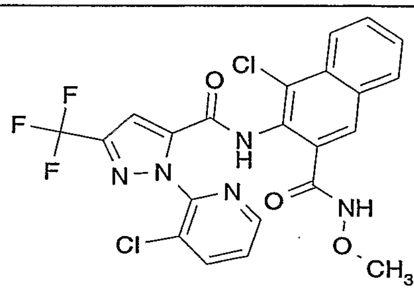
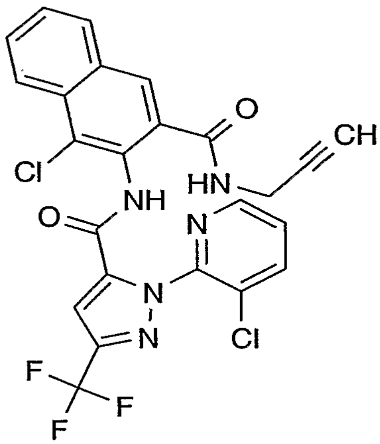
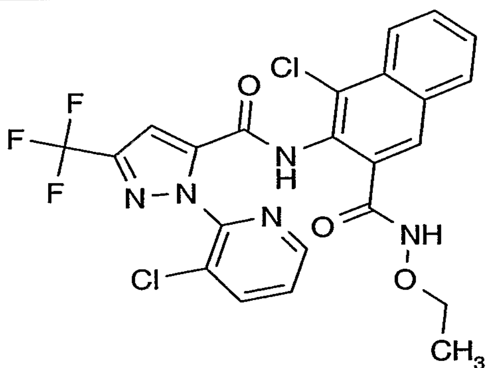
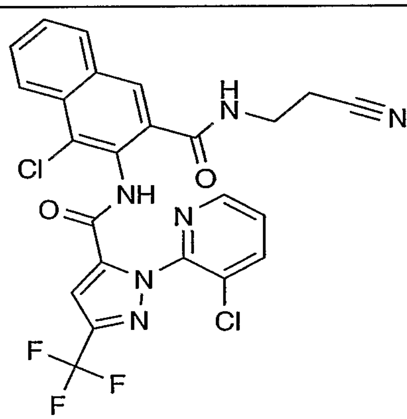
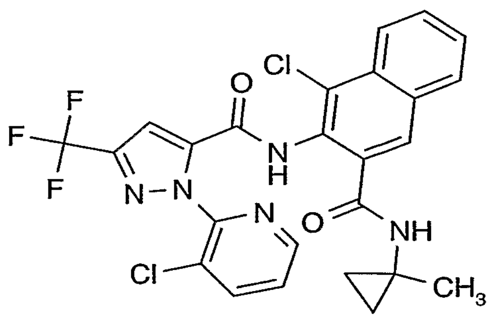
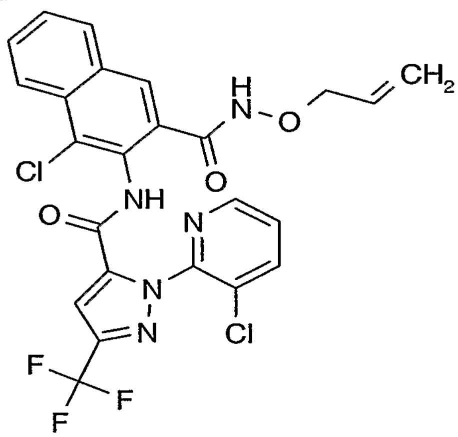
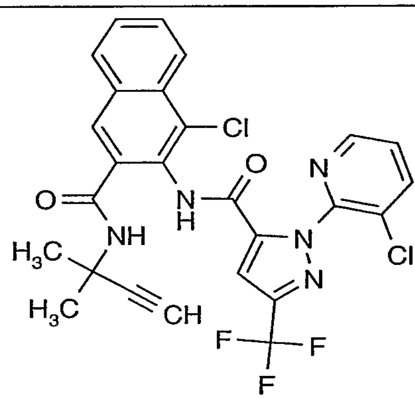
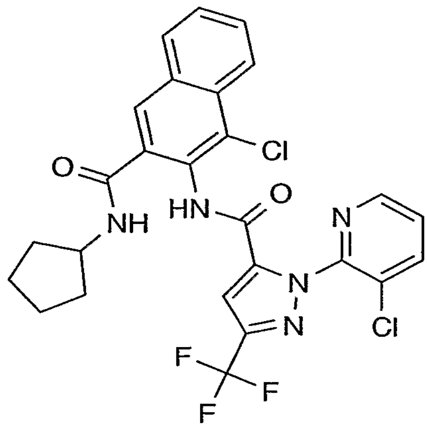
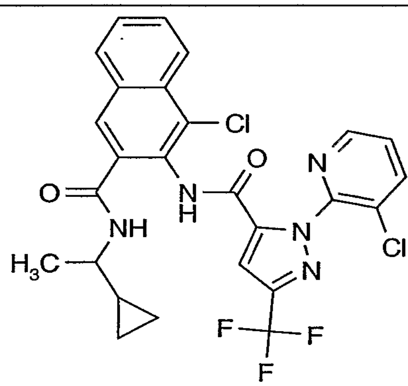
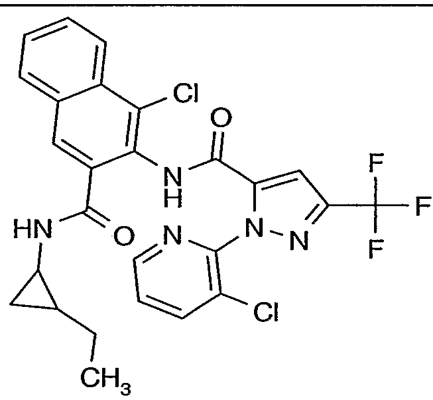
Compound Structure	MS	^{1}H-NMR	M. P.
T91.1 			265-267
T91.3 			251-253

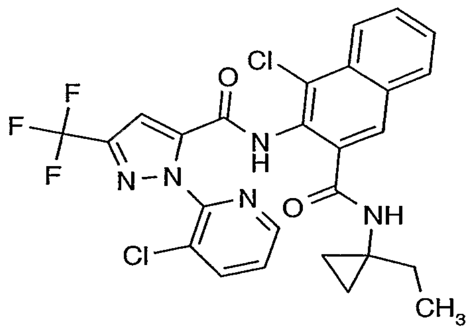
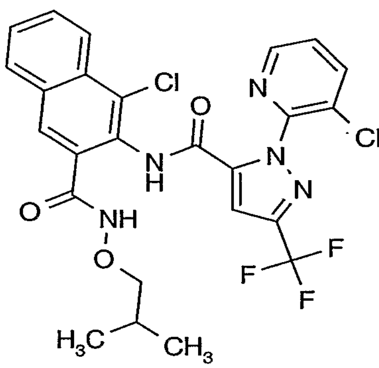
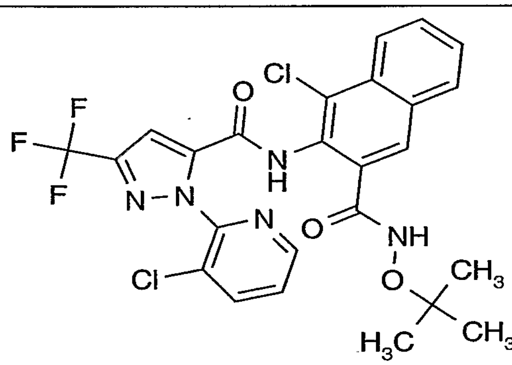
Table P2:

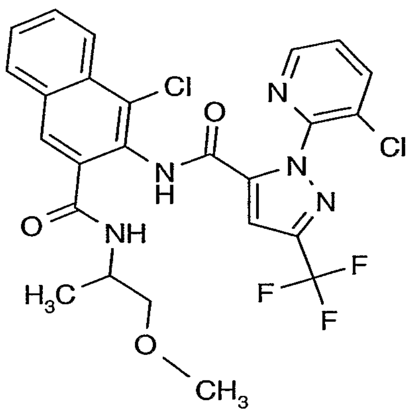
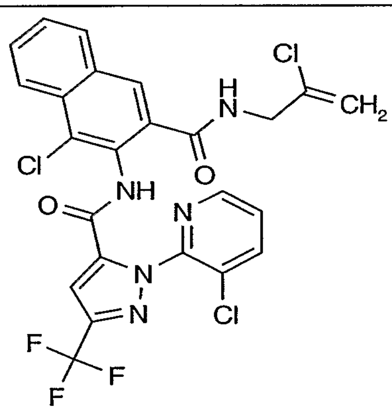
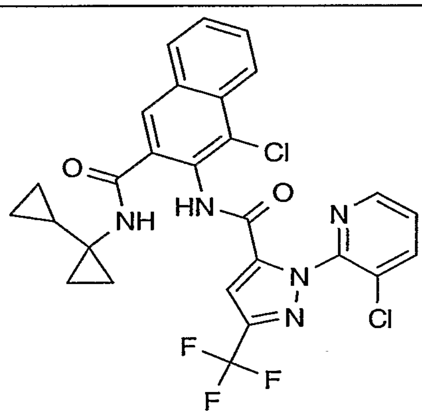
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.001		524 (M+H)+)

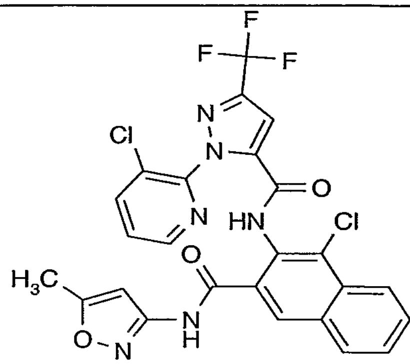
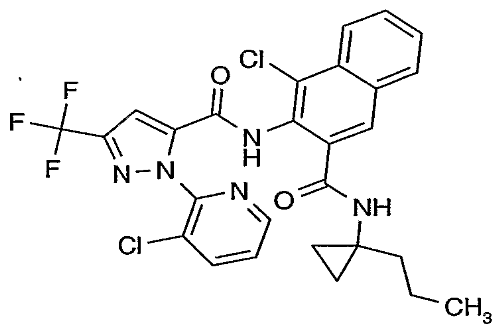
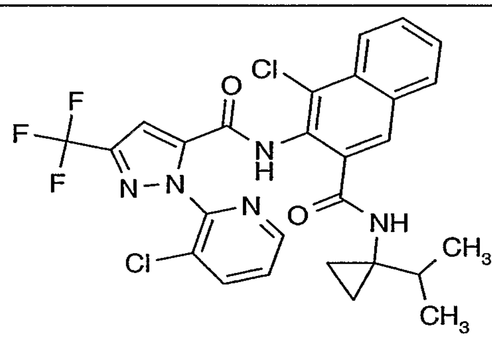
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.002		532 ((M+H)+)
P2.003		538 ((M+H)+)
P2.004		547 ((M+H)+)

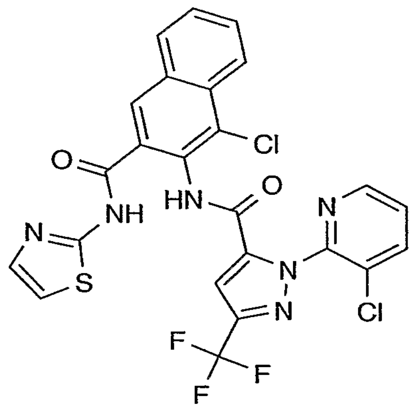
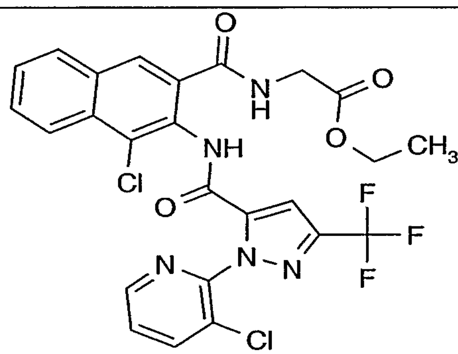
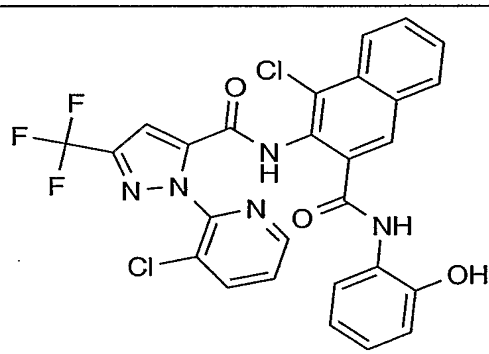
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.005		548 ((M+H)+)
P2.006		550 ((M+H)+)
P2.007		560 ((M+H)+)

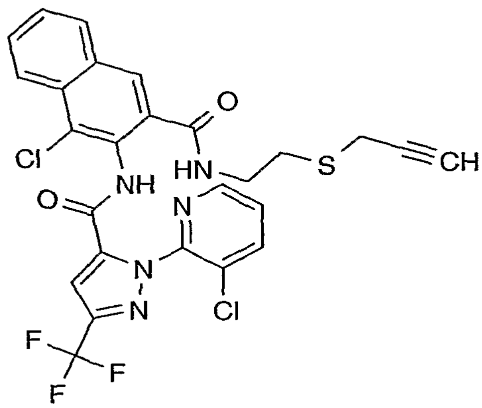
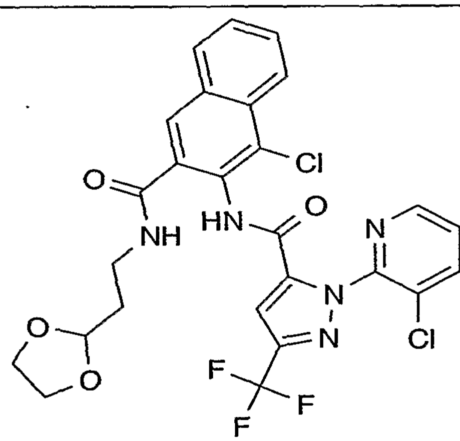
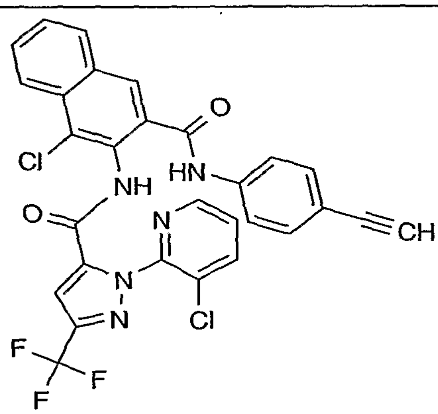
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.008		562 ((M+H)+)
P2.009		562 ((M+H)+)
P2.010		562 ((M+H)+)

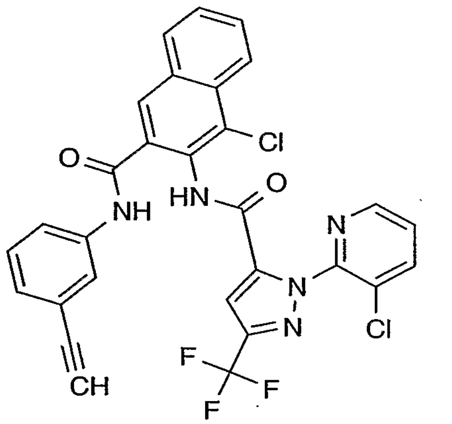
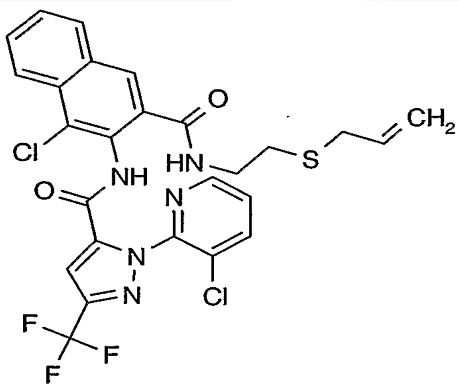
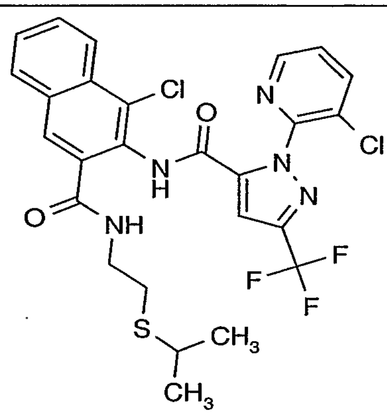
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.011		562 ((M+H)+)
P2.012		566 ((M+H)+)
P2.013		566 ((M+H)+)

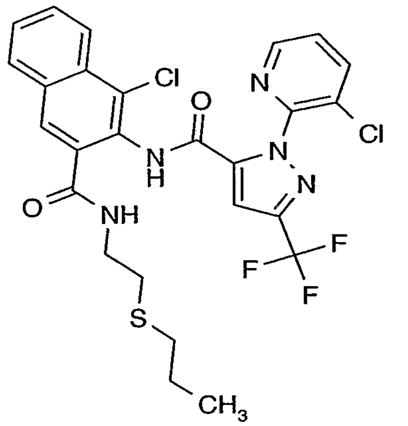
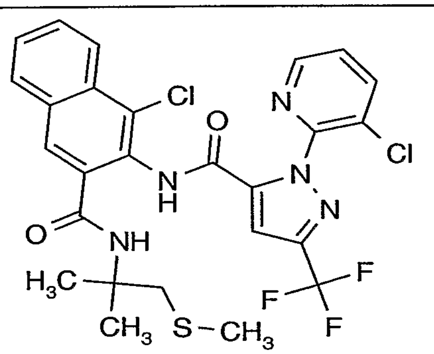
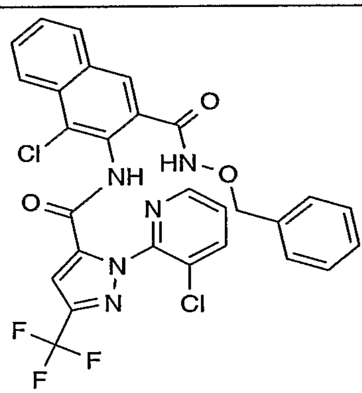
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.014		566 ((M+H)+)
P2.015		568 ((M+H)+)
P2.016		574 ((M+H)+)

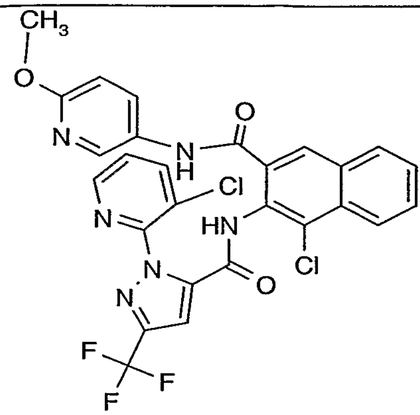
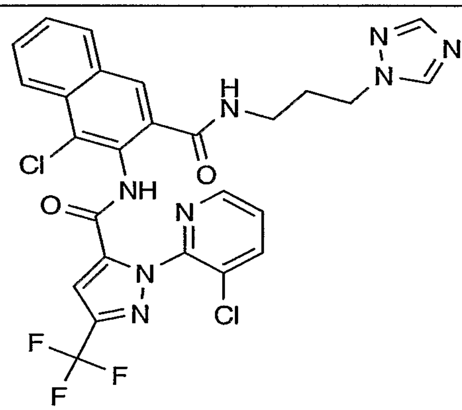
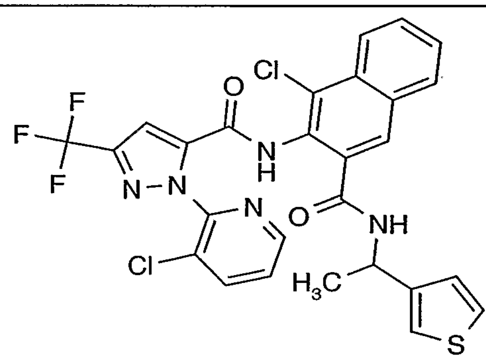
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.017		575 ((M+H)+)
P2.018		576 ((M+H)+)
P2.019		576 ((M+H)+)

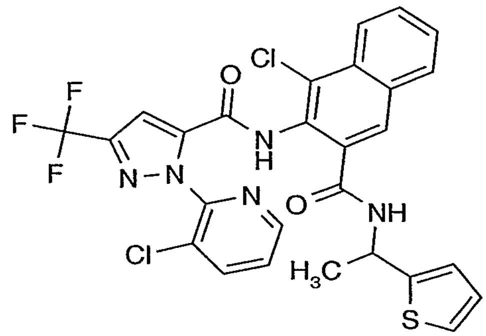
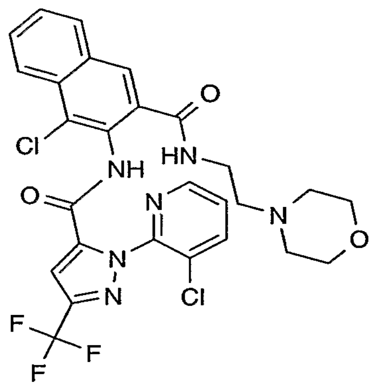
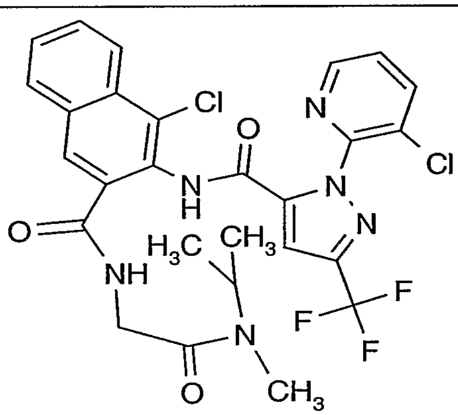
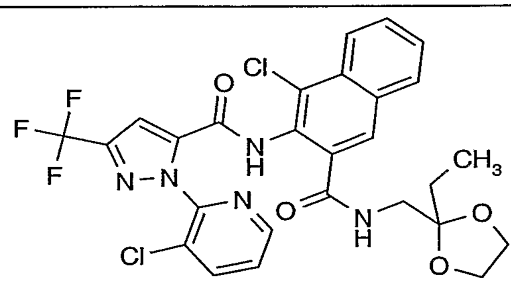
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.020		577 ((M+H)+)
P2.021		580 ((M+H)+)
P2.022		586 ((M+H)+)

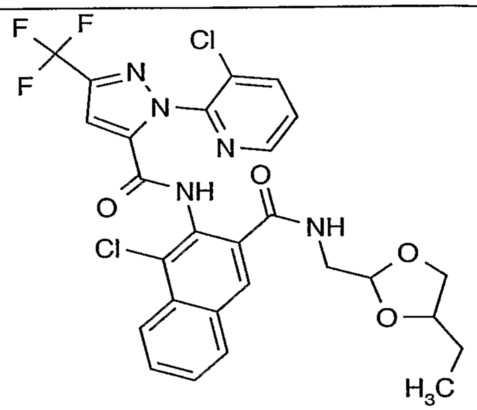
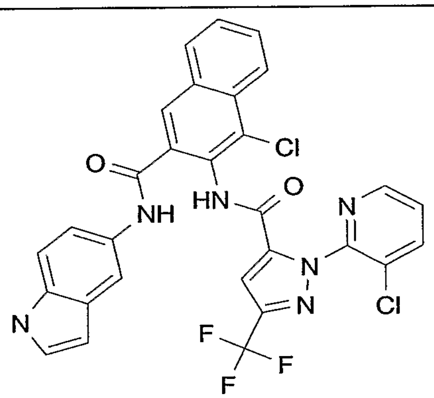
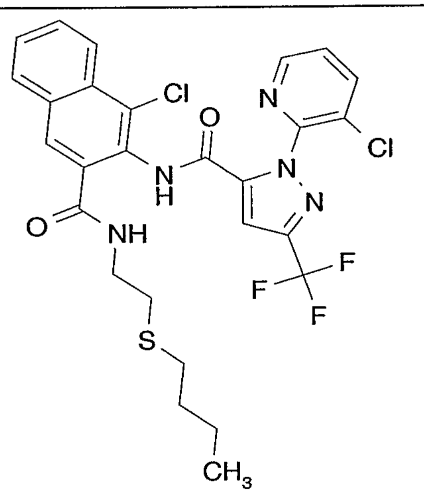
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.023		592 ((M+H)+)
P2.024		594 ((M+H)+)
P2.025		594 ((M+H)+)

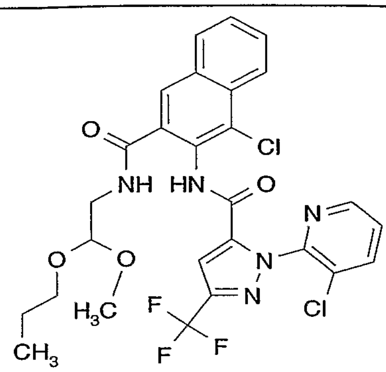
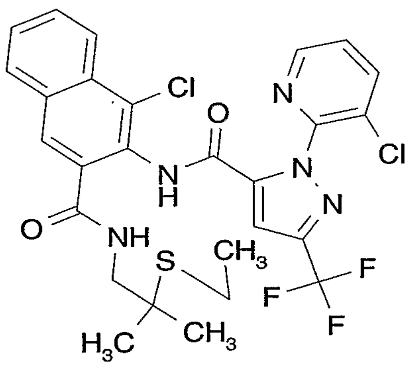
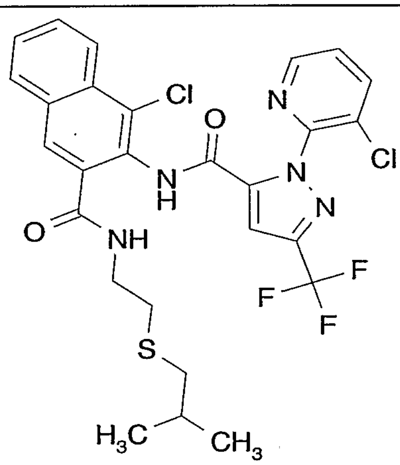
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.026		594 ((M+H)+)
P2.027		594 ((M+H)+)
P2.028		596 ((M+H)+)

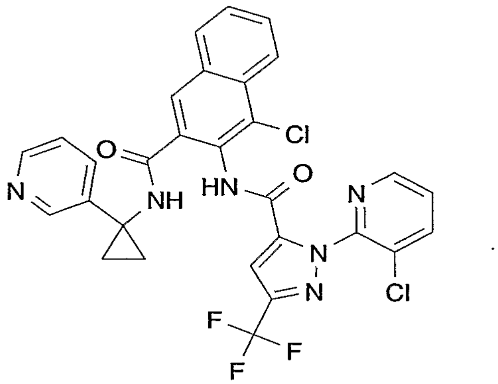
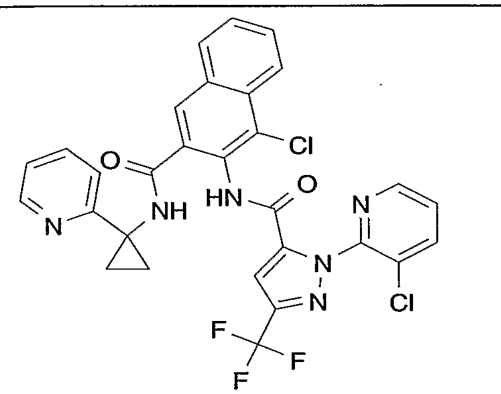
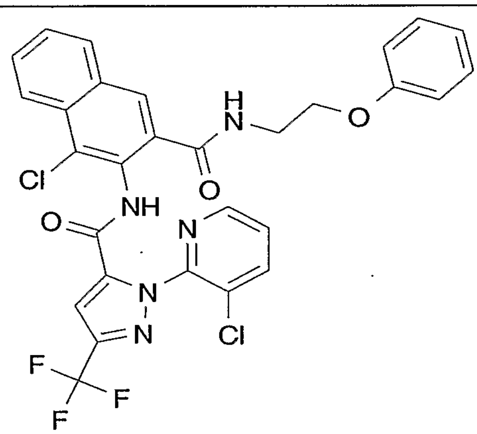
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.029		596 ((M+H)+)
P2.030 (T1.273)		596 ((M+H)+)
P2.031		600 ((M+H)+)

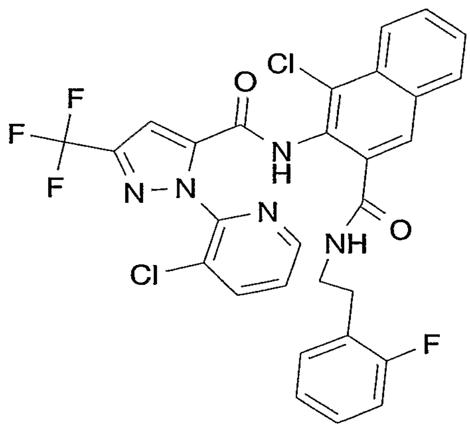
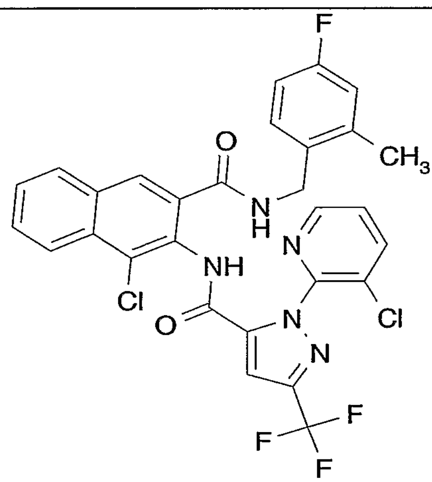
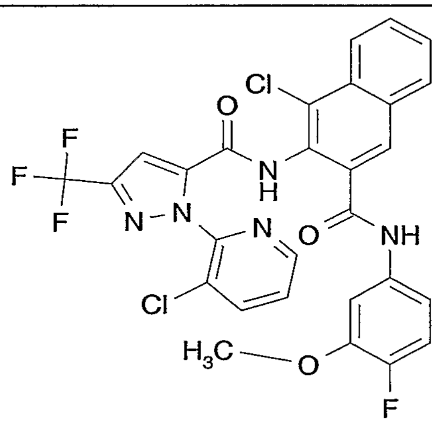
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.032		601 ((M+H)+)
P2.033		603 ((M+H)+)
P2.034		604 ((M+H)+)

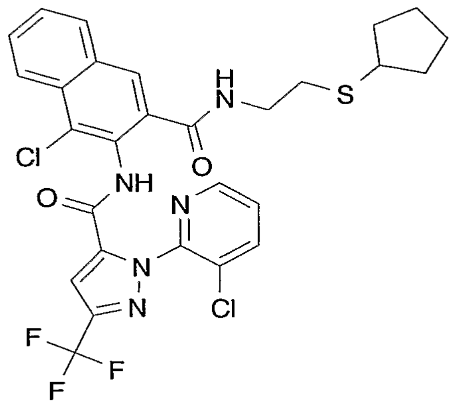
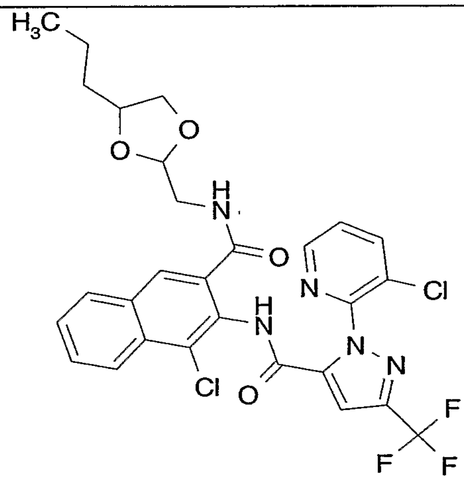
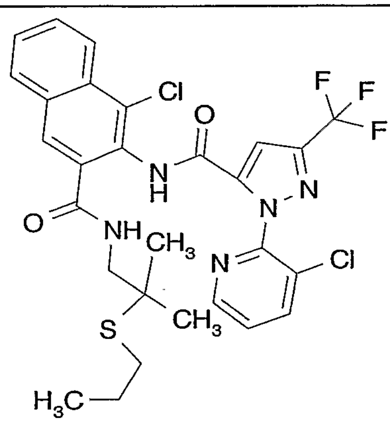
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.035		604 ((M+H)+)
P2.036		607 ((M+H)+)
P2.037		607 ((M+H)+)
P2.038		608 ((M+H)+)

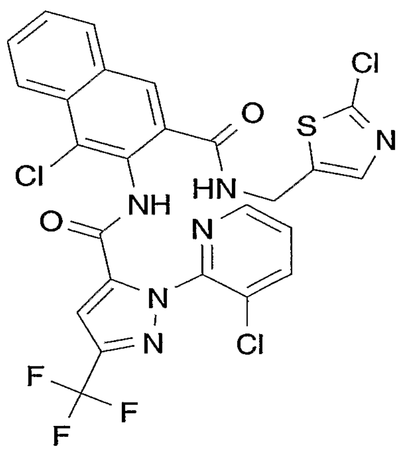
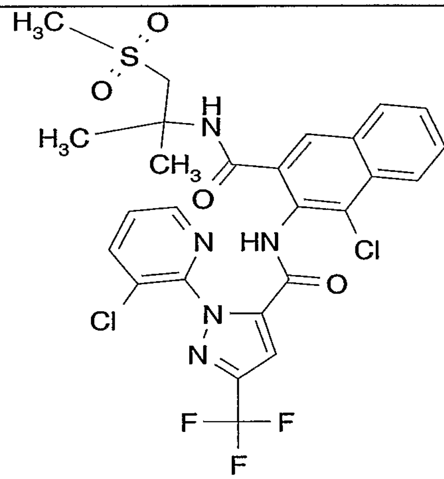
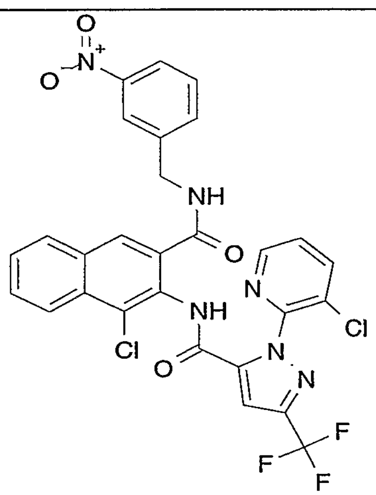
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.039		608 ((M+H)+)
P2.040		609 ((M+H)+)
P2.041		610 ((M+H)+)

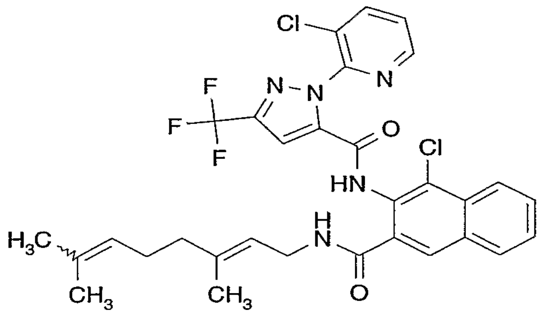
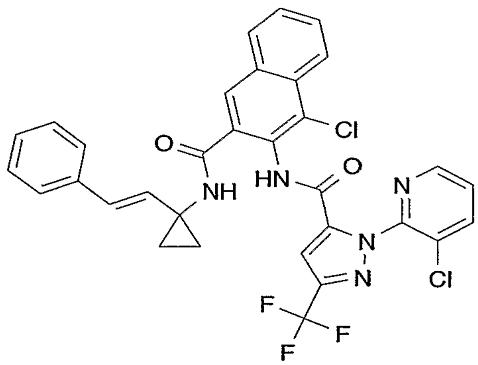
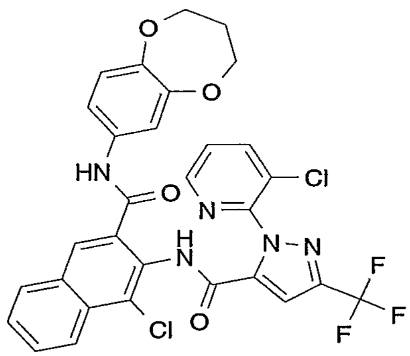
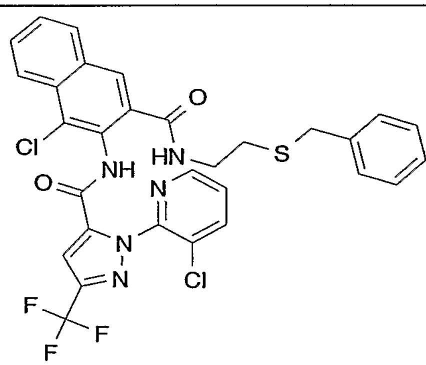
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.042		610 ((M+H)+)
P2.043		610 ((M+H)+)
P2.044		610 ((M+H)+)

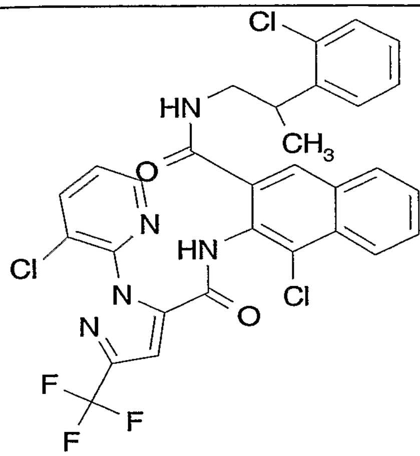
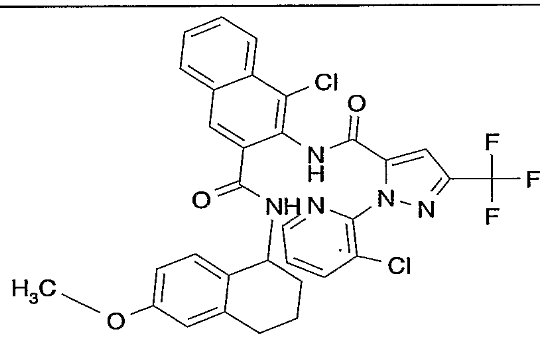
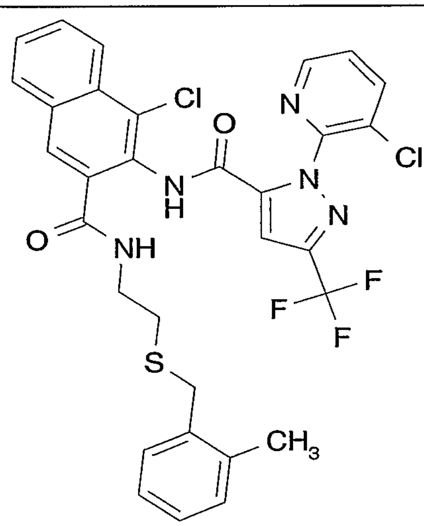
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.045		611 ((M+H)+)
P2.046		611 ((M+H)+)
P2.047		614 ((M+H)+)

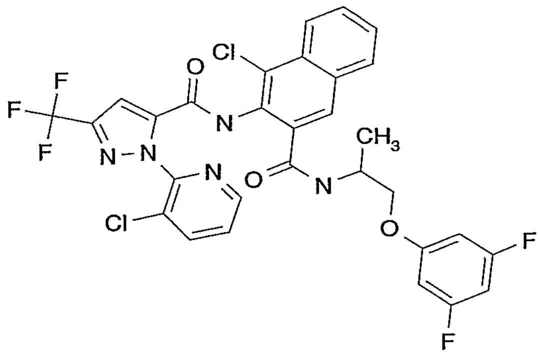
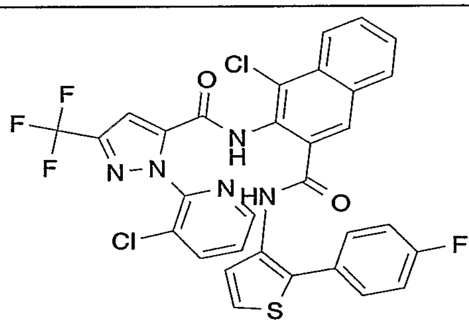
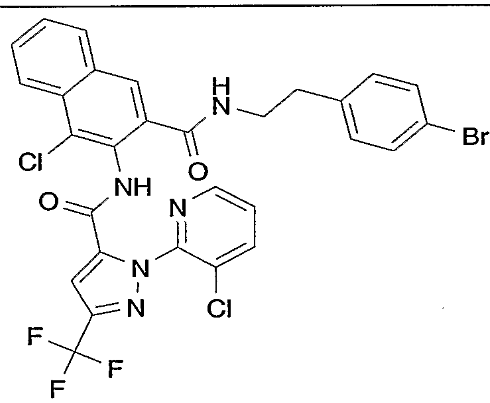
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.048		616 ((M+H)+)
P2.049		616 ((M+H)+)
P2.050		618 ((M+H)+)

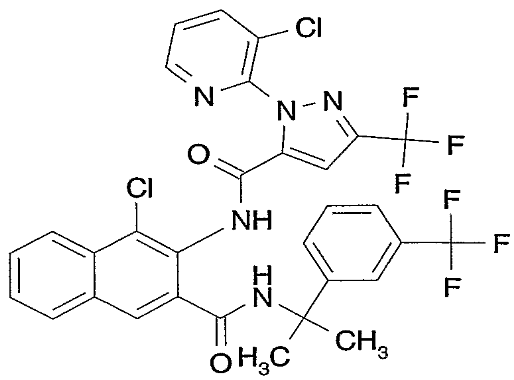
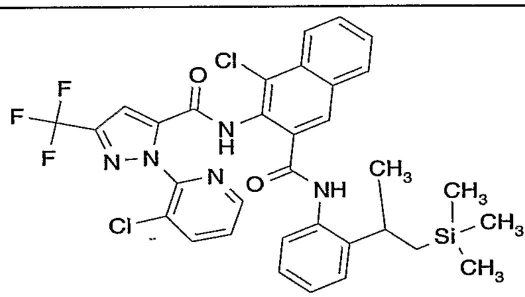
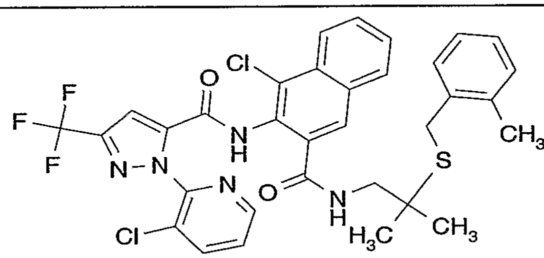
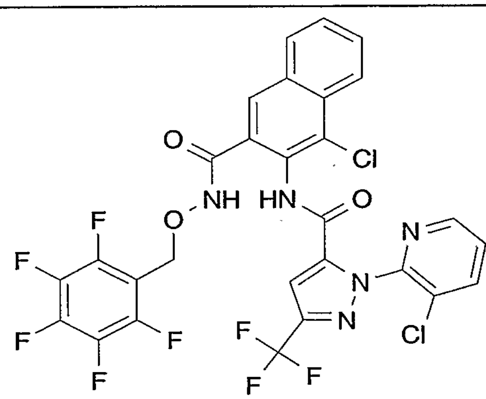
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.051		622 ((M+H)+)
P2.052		622 ((M+H)+)
P2.053		624 ((M+H)+)

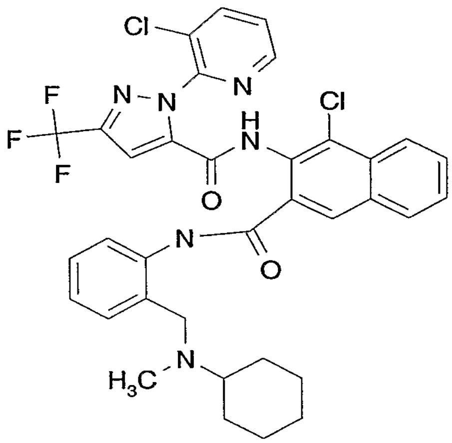
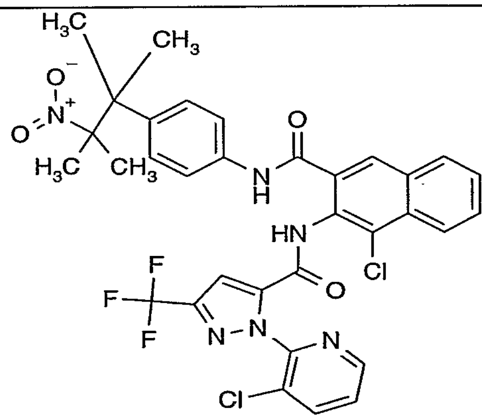
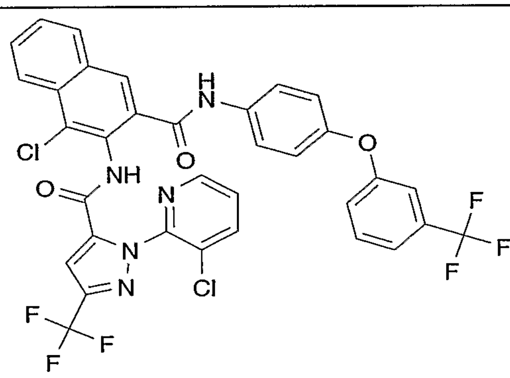
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.054		625 ((M+H)+)
P2.055		628 ((M+H)+)
P2.056		629 ((M+H)+)

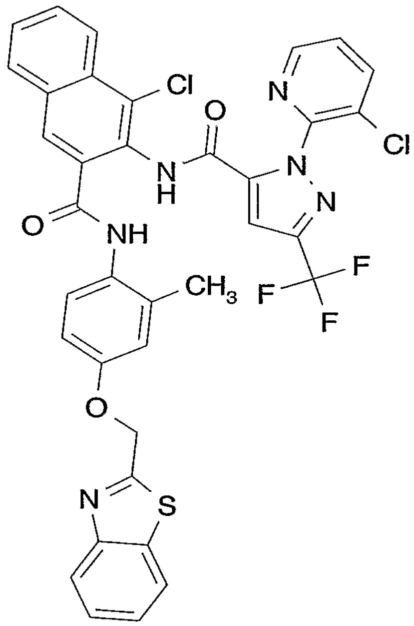
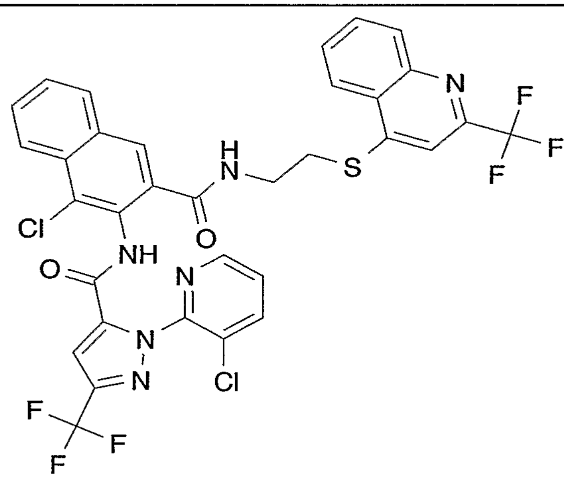
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.057		630 ((M+H)+)
P2.058		636 ((M+H)+)
P2.059		642 ((M+H)+)
P2.060		644 ((M+H)+)

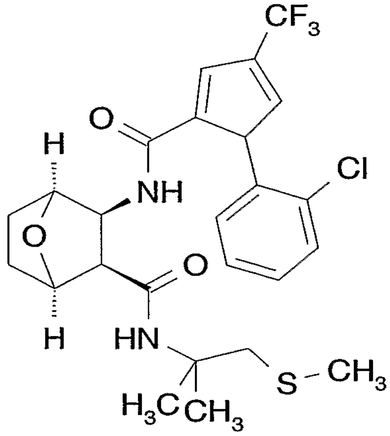
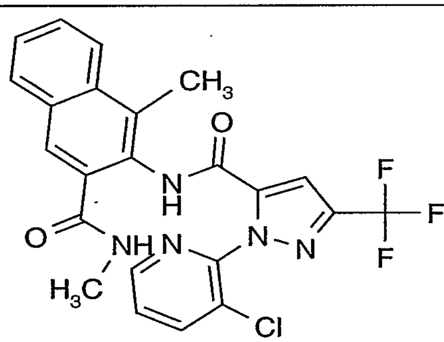
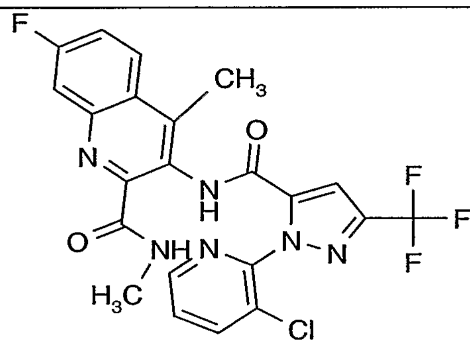
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.061		646 ((M+H)+)
P2.062		654 ((M+H)+)
P2.063		658 ((M+H)+)

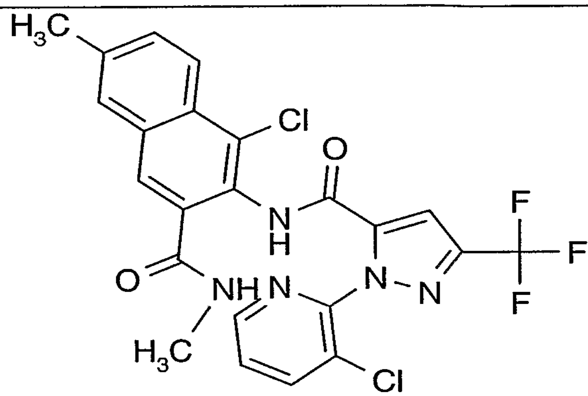
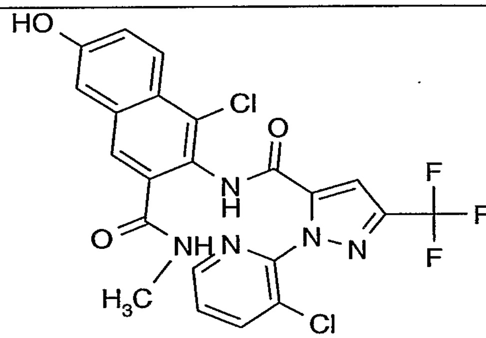
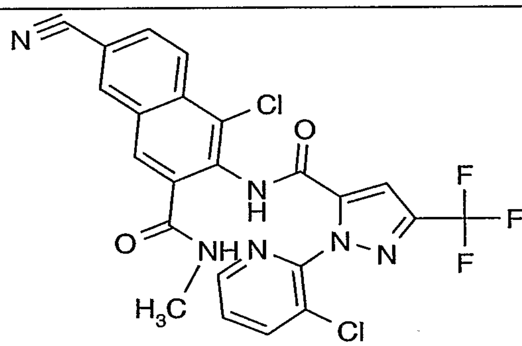
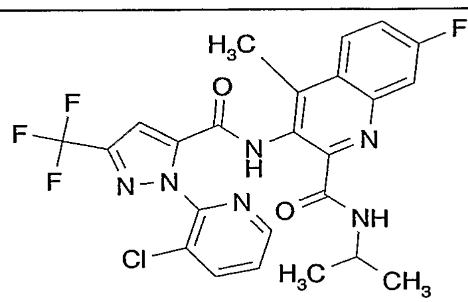
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.064		664 ((M+H)+)
P2.065		670 ((M+H)+)
P2.066		676 ((M+H)+)

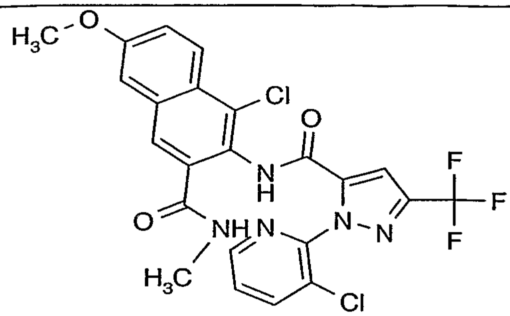
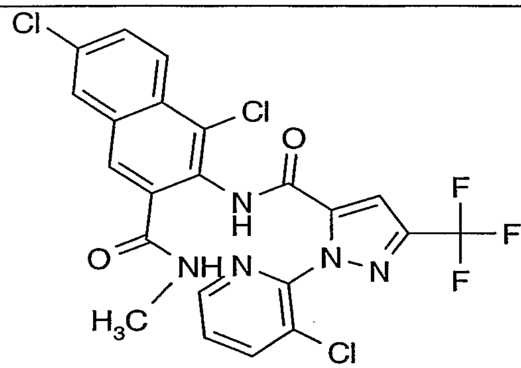
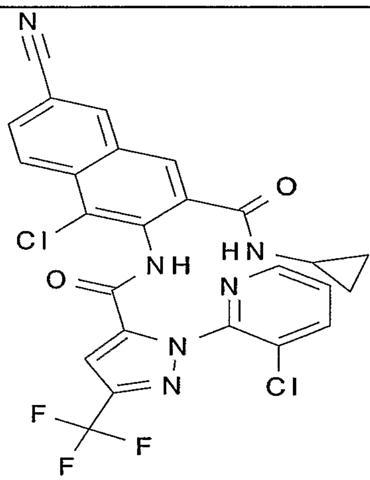
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.067		680 ((M+H)+)
P2.068		684 ((M+H)+)
P2.069		686 ((M+H)+)
P2.070		690 ((M+H)+)

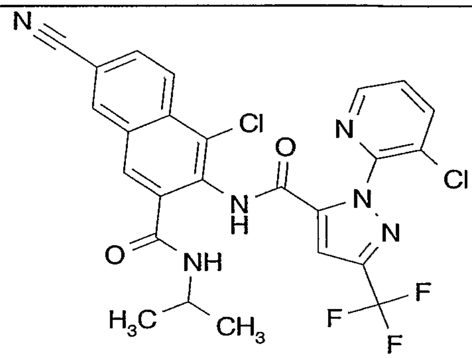
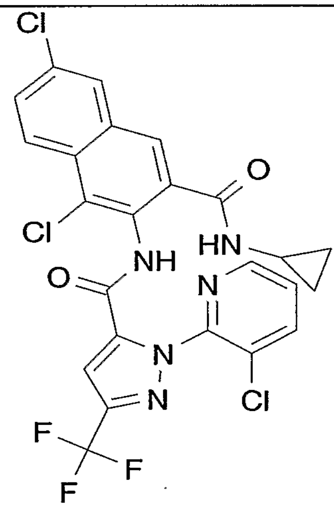
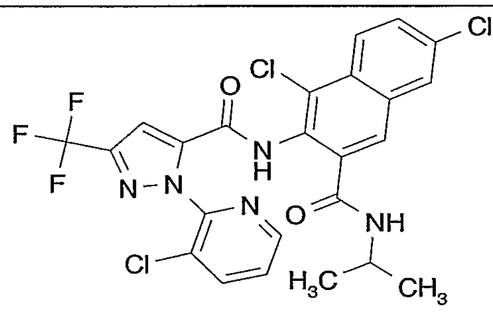
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.071		695 ((M+H)+)
P2.072		699 ((M+H)+)
P2.073		730 ((M+H)+)

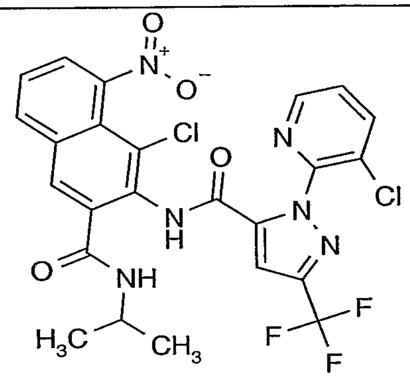
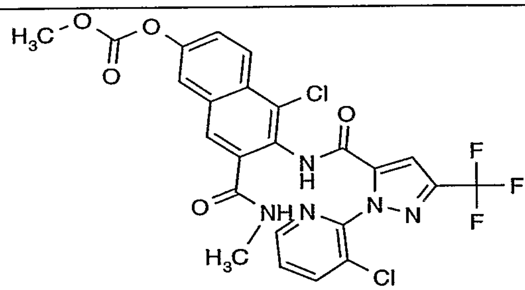
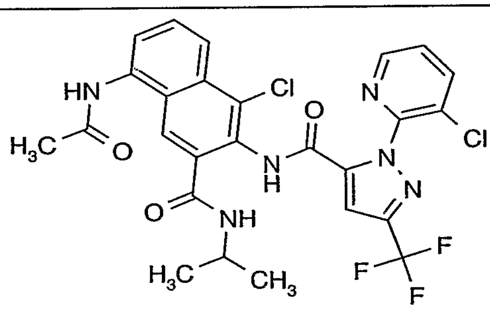
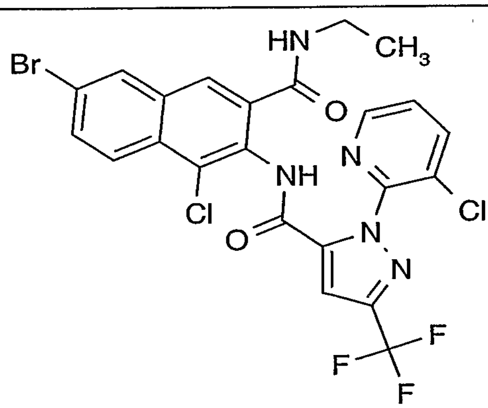
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.074		747 ((M+H)+)
P2.075		749 ((M+H)+)

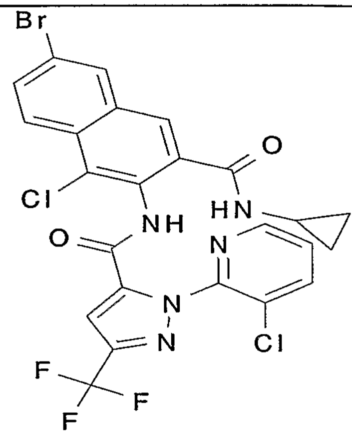
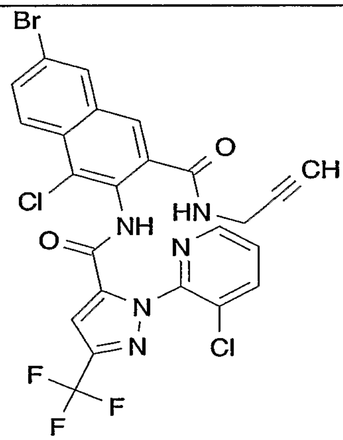
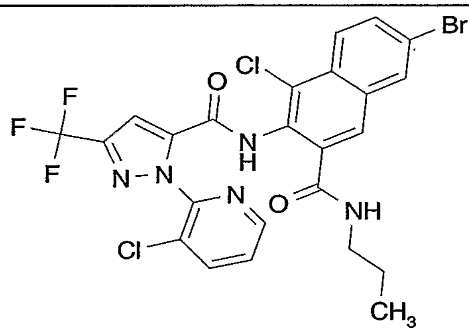
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.076 (T85.273)		459 ((M+H)+) oil
P2.077 (T8.1)		488 ((M+H)+)
P2.078		507 ((M+H)+)

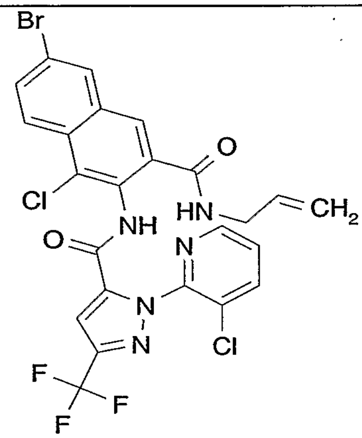
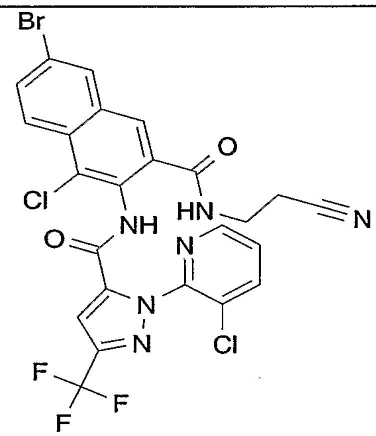
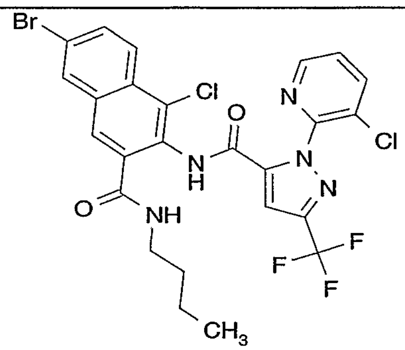
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.079		522 ((M+H)+)
P2.080		524 ((M+H)+)
P2.081 (T5.1)		533 ((M+H)+)
P2.082		535 ((M+H)+)

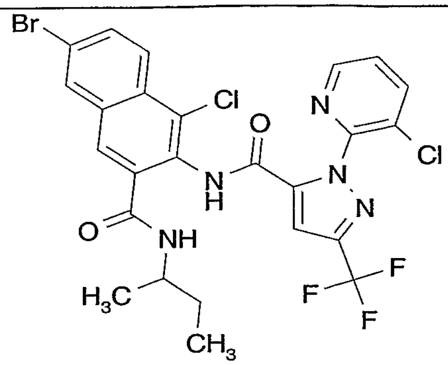
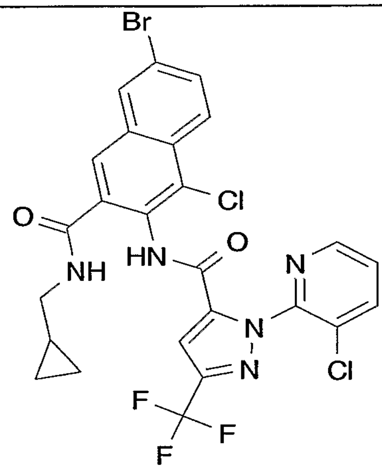
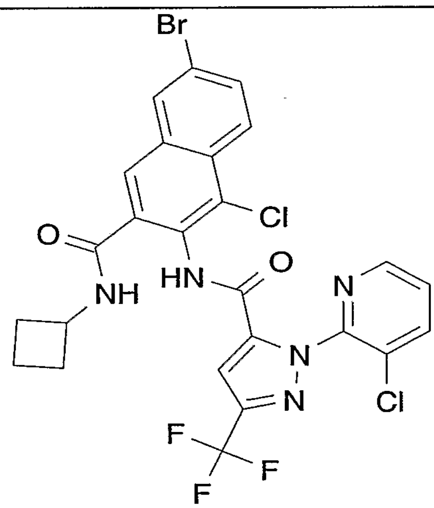
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.083		538 ((M+H)+)
P2.084 (T20.1)		544 ((M+H)+)
P2.085 (T5.207)		559 ((M+H)+)

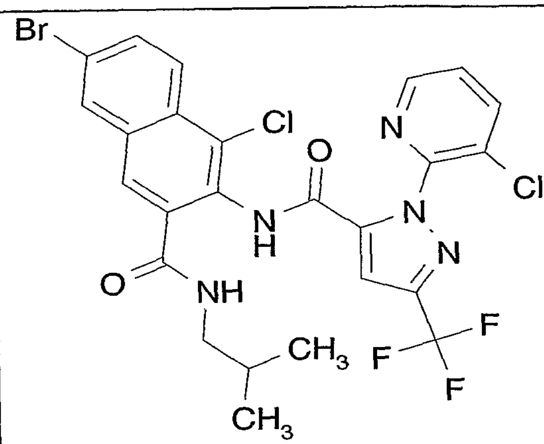
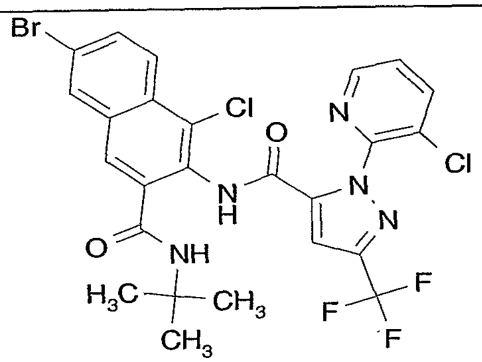
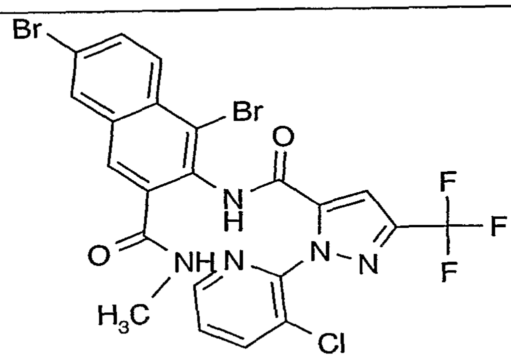
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.086 (T5.3)		561 ((M+H)+)
P2.087 (T20.207)		568 ((M+H)+)
P2.088 (T20.3)		570 ((M+H)+)

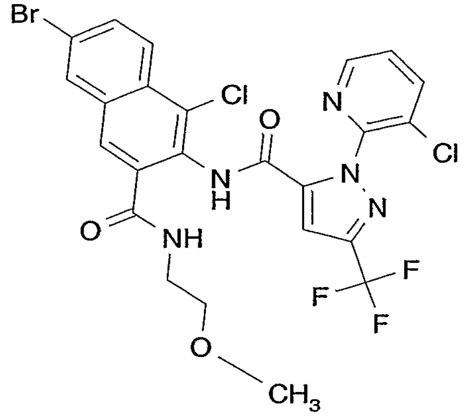
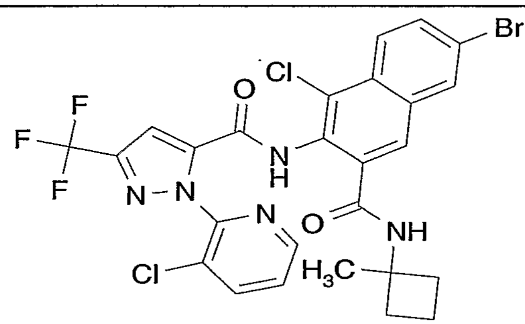
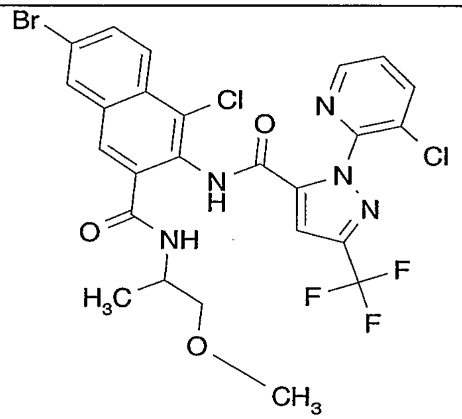
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.089		581 ((M+H)+)
P2.090		582 ((M+H)+)
P2.091		593 ((M+H)+)
P2.092 (T2.2)		602 ((M+H)+)

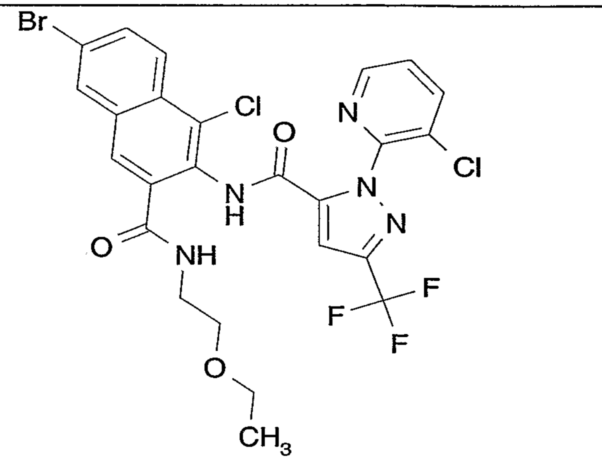
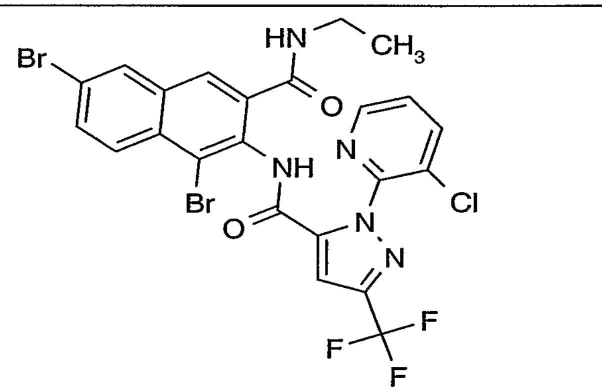
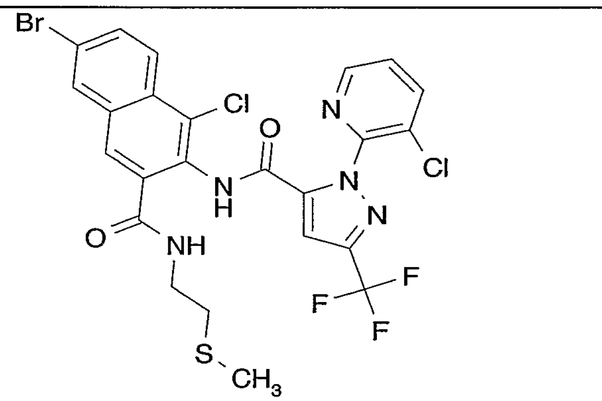
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.093 (T2.207)		612 ((M-1)-)
P2.094		612 ((M+H)+)
P2.095		614 ((M-1)-)

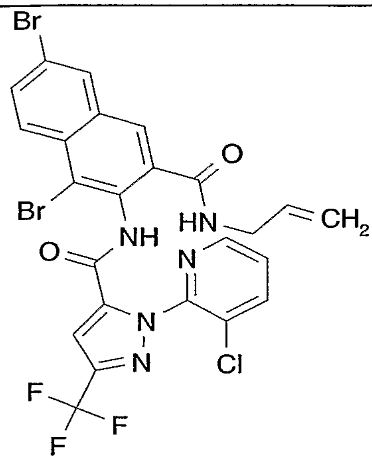
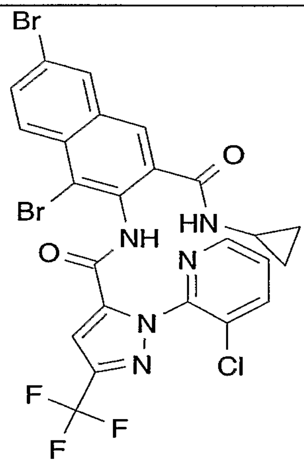
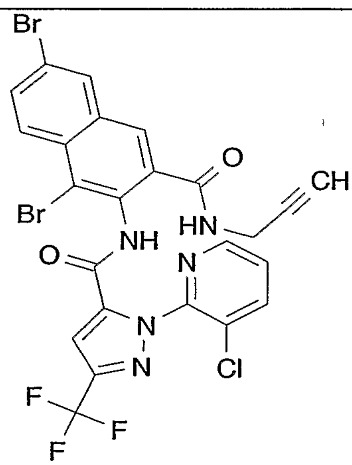
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.096		614 ((M+H)+)
P2.097		627 ((M+H)+)
P2.098		628 ((M+H)+)

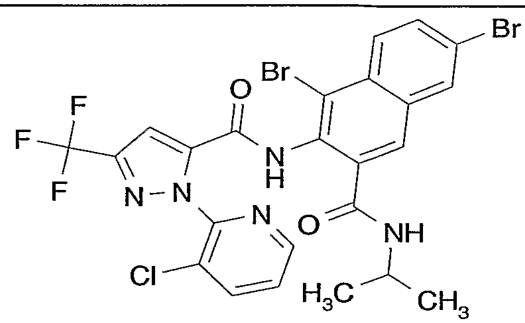
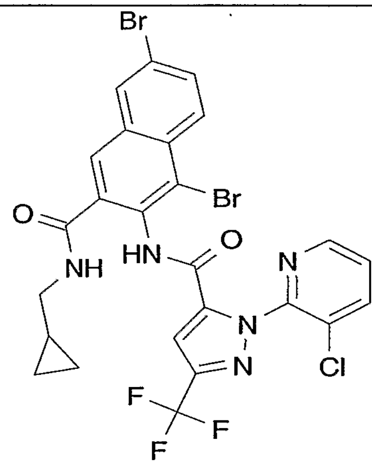
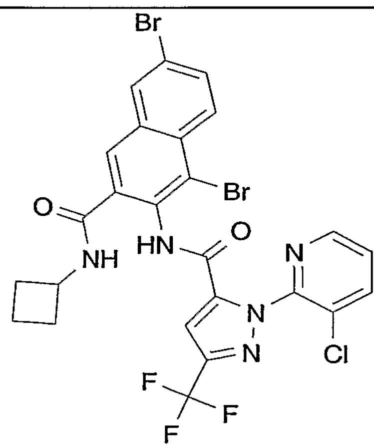
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.099		628 ((M-1)-)
P2.100		628 ((M+H)+)
P2.101		628 ((M+H)+)

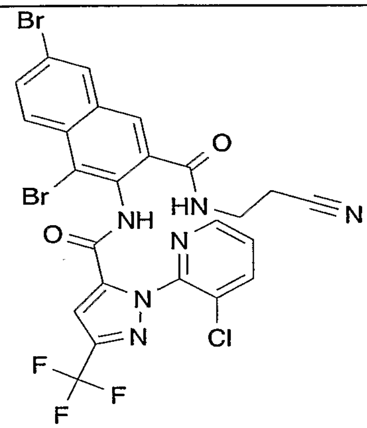
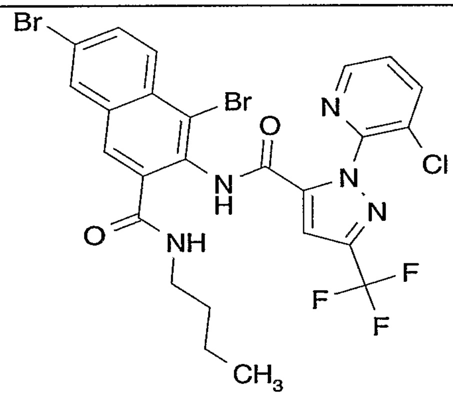
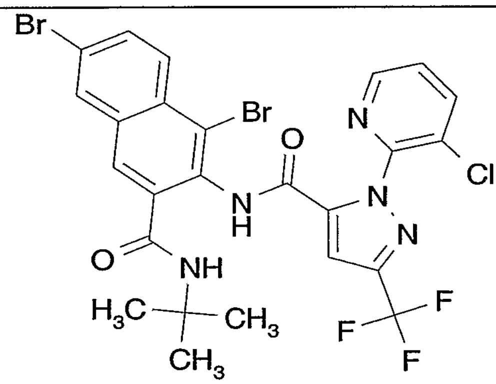
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.102		630 ((M+H)+)
P2.103		630 ((M+H)+)
P2.104 (T9.1)		632 ((M+H)+)

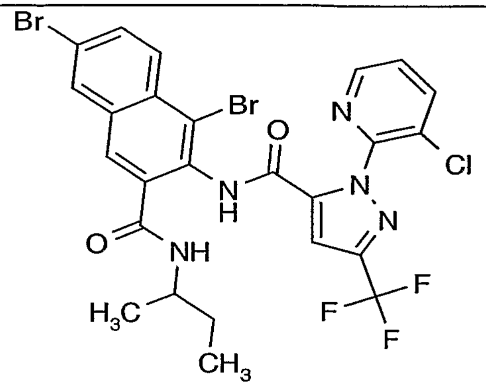
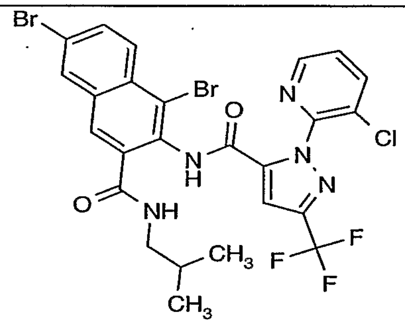
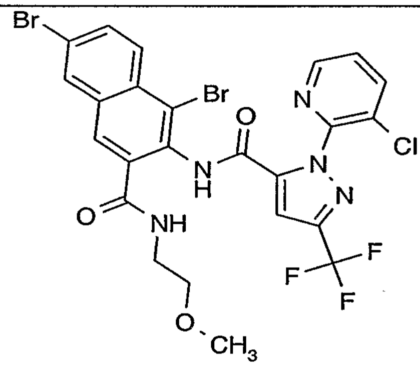
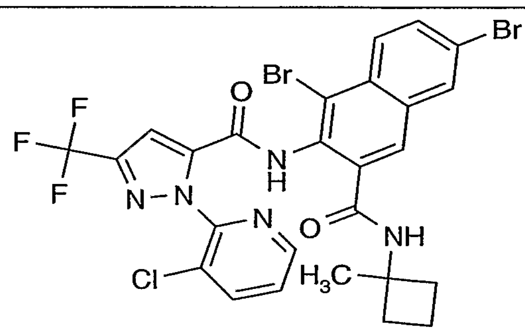
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.105		632 ((M+H)+)
P2.106		642 ((M+H)+)
P2.107		646 ((M+H)+)

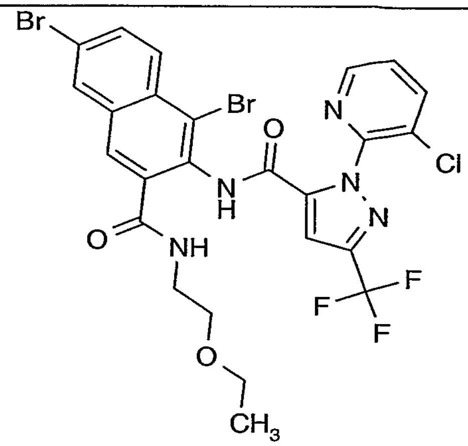
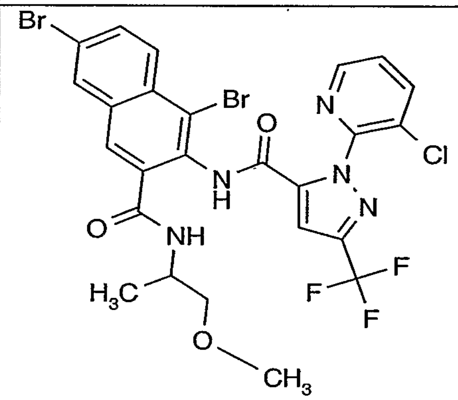
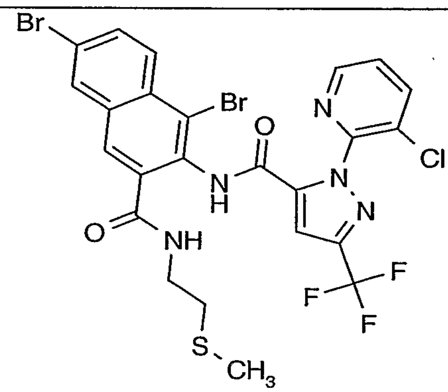
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.108		646 ((M+H)+)
P2.109 (T9.2)		646 ((M+H)+)
P2.110		648 ((M+H)+)

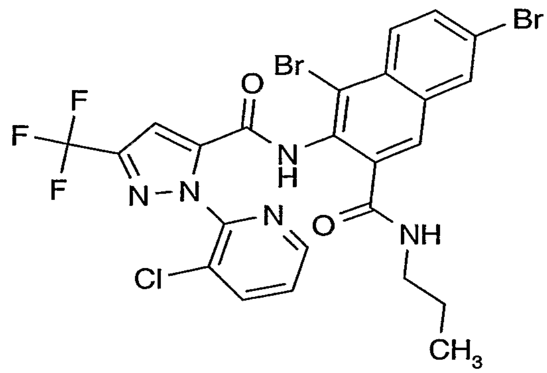
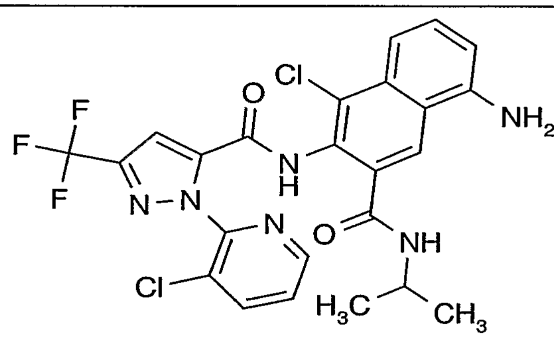
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.111		656 ((M+H)+)
P2.112 (T9.207)		656 ((M+H)+)
P2.113		656 ((M+H)+)

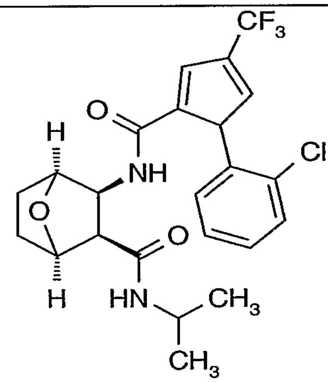
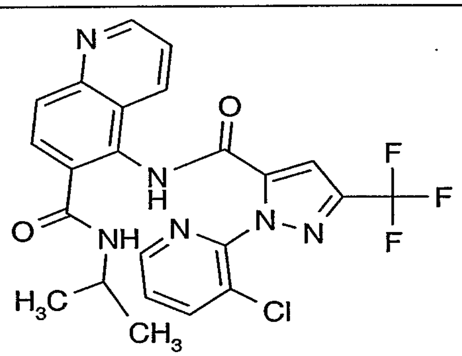
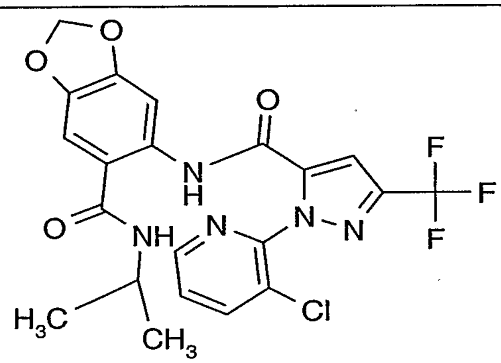
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.114 (T9.3)		660 ((M+H)+)
P2.115		670 ((M+H)+)
P2.116		670 ((M+H)+)

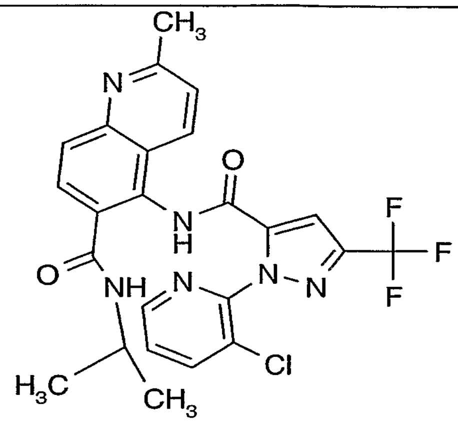
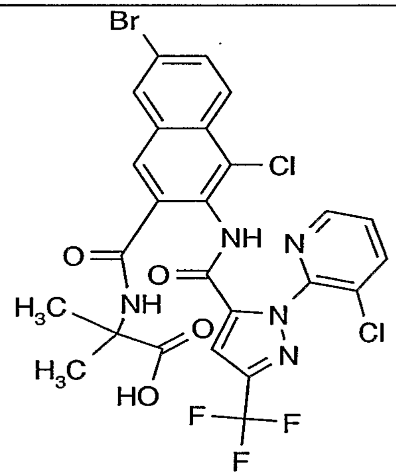
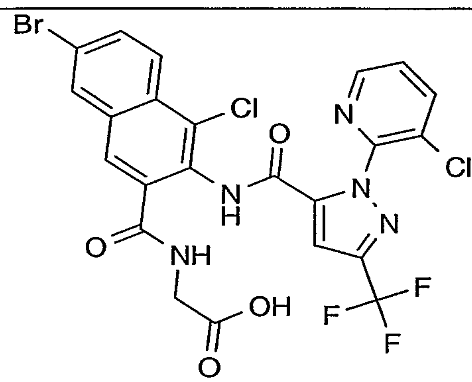
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.117		671 ((M+H)+)
P2.118		672 ((M+H)+)
P2.119 (T9.145)		672 ((M-1)-)

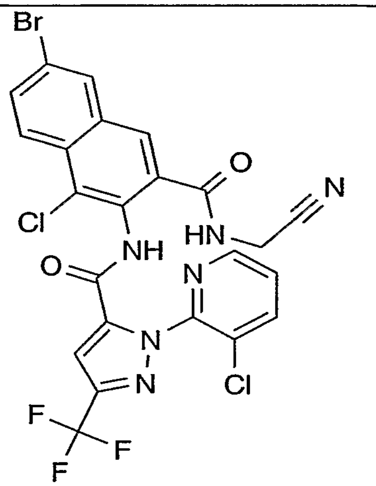
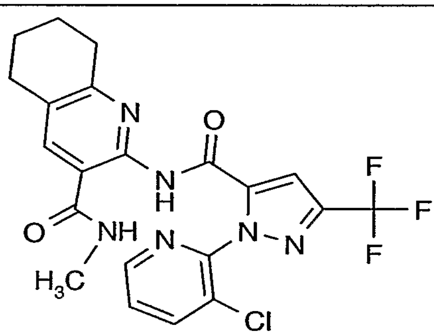
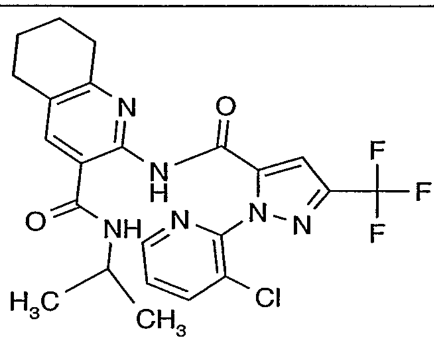
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.120		674 ((M+H)+)
P2.121		674 ((M+H)+)
P2.122		676 ((M+H)+)
P2.123		686 ((M+H)+)

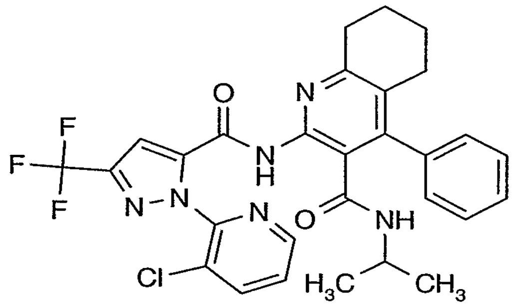
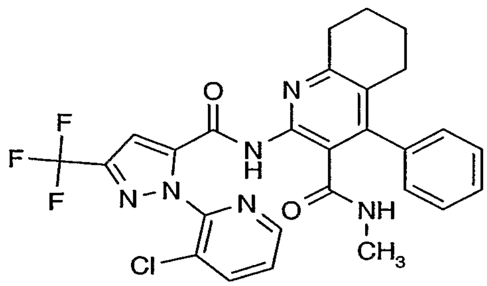
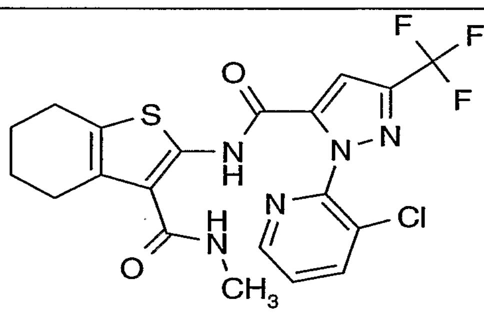
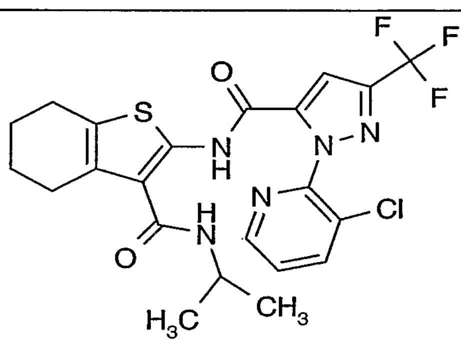
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.124		688 ((M+H)+)
P2.125		690 ((M+H)+)
P2.126		692 ((M+H)+)

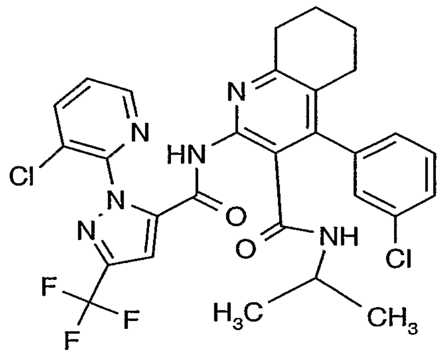
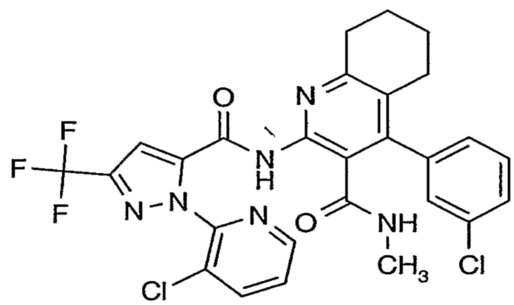
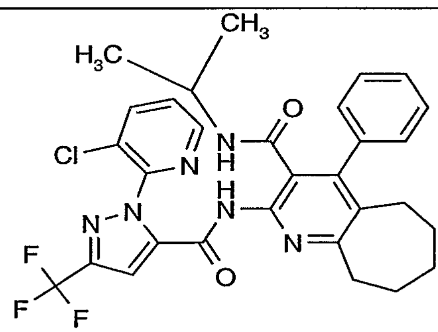
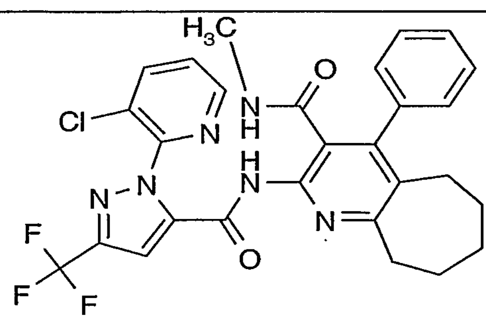
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.127		0.82-0.86 (t, 3H), 1.37-1.46 (m, 2H), 3.07-3.12 (m, 2H), 7.64-7.66 (m, 1H), 7.87-7.89 (dd, 1H), 7.88 (s, 1H), 8.07 (s, 1H), 8.13-8.15 (d, 1H), 8.19-8.21 (d, 1H), 8.41-8.42 (d, 1H), 8.48 (br, 1H), 8.51-8.52 (d, 1H)
P2.128		1.07-7.08 (d, 6H), 3.90-3.97 (m, 1H), 6.10 (br s, 2H), 6.79-6.80 (d, 1H) 7.33-7.35 (d, 1H), 7.39-7.43 (m, 1H), 7.63-7.66 (m, 1H), 7.88 (s, 1H), 8.00-8.02 (d, 1H), 8.19 (s, 1H0, 8.19-8.21 (d, 1H), 8.51-8.52 (d, 1H), 10.67 (s,

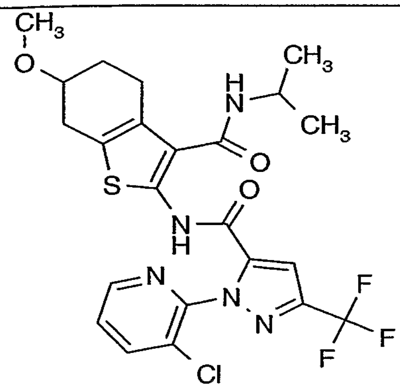
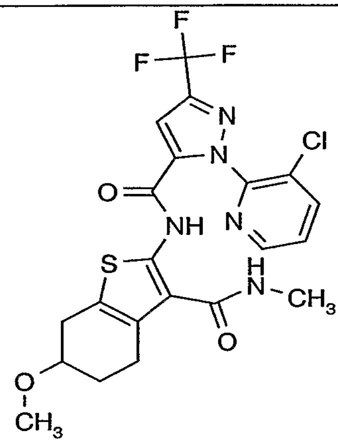
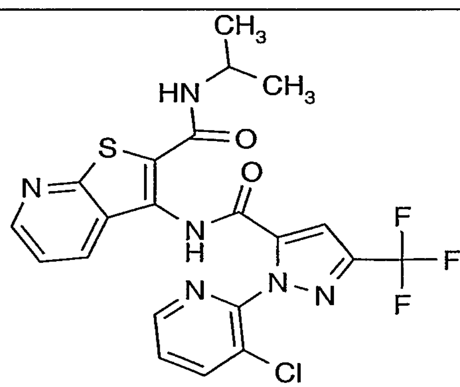
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
		1H)
P2.129 (T85.3)		220-224°C
P2.130		503 ((M+H)+)
P2.131 (T84.3)		496 ((M+H)+)

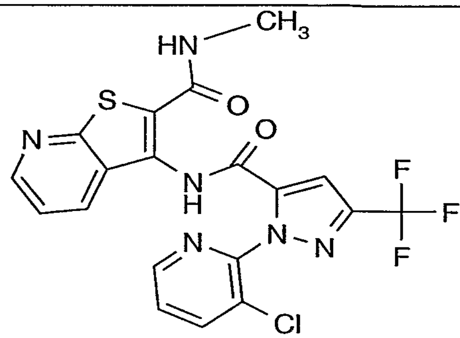
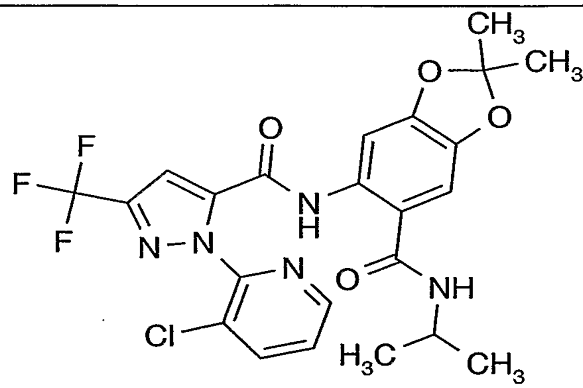
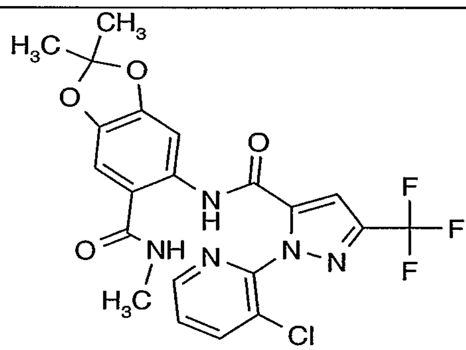
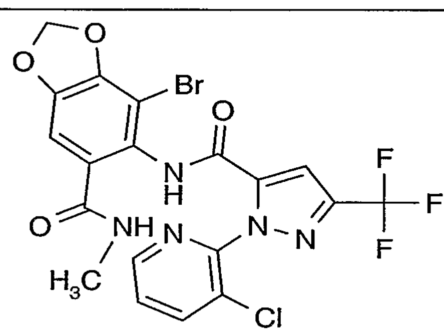
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.132		517 ((M+H)+)
P2.133		658 ((M+H)+)
P2.134		630 ((M+H)+)

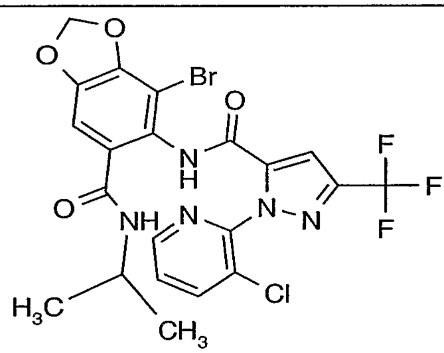
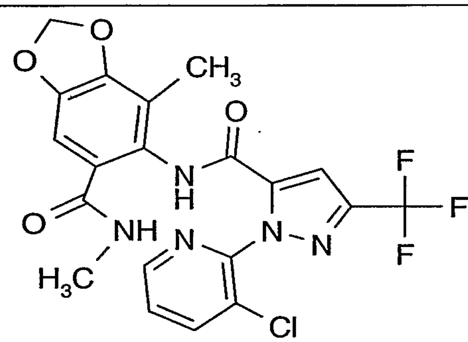
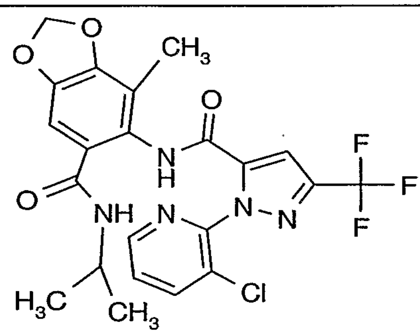
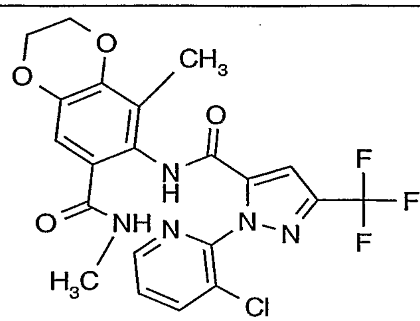
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.135		611 ((M+H)+)
P2.136 (T50.1)		145-147 °C
P2.137 (T50.3)		143-145 °C

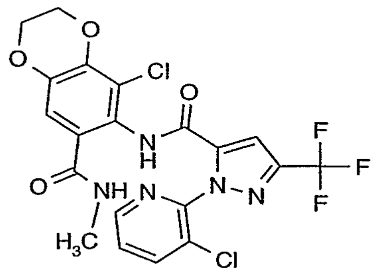
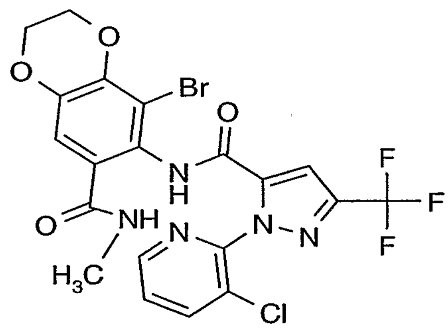
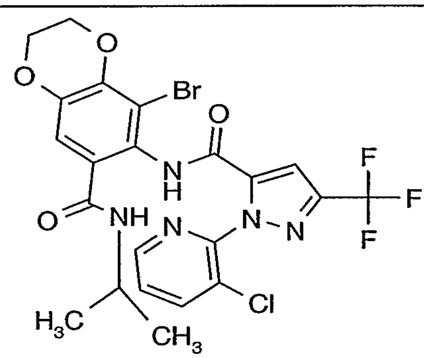
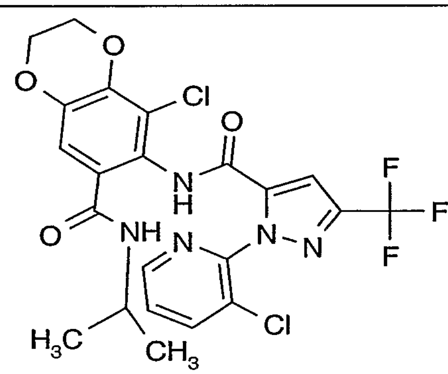
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.138 (T51.3)		146-148 °C
P2.139 (T51.1)		165-168 °C
P2.140 (T46.1)		261-263 °C
P2.141 (T46.1)		246-248 °C

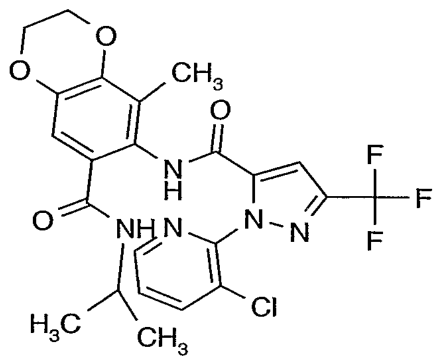
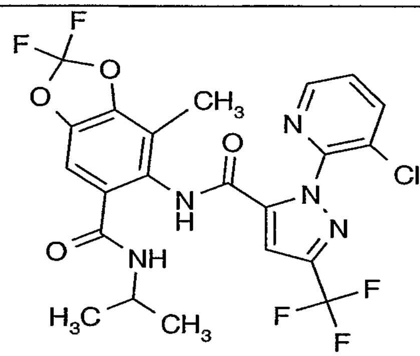
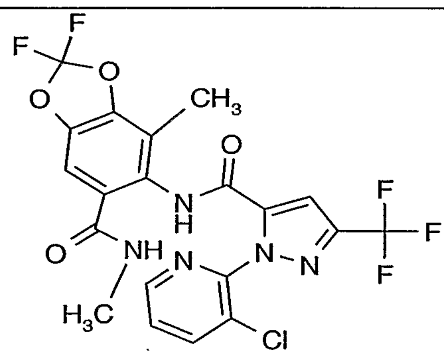
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.142 (T53.3)		259-260 °C
P2.143 (T53.1)		183-185 °C
P2.144 (T52.3)		269-270 °C
P2.145 (T52.1)		211-213 °C

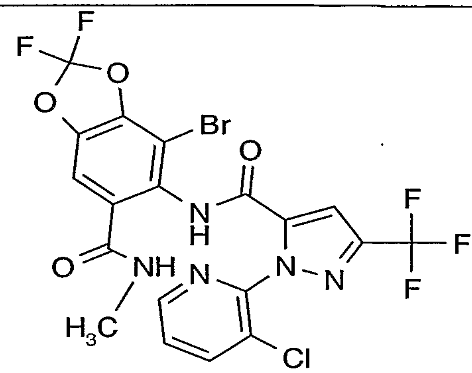
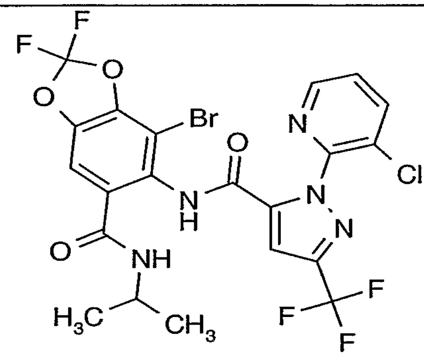
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.146 (T74.3)		206-207 °C
P2.147 (T74.1)		133-135 °C
P2.148		212-215 °C

Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.149		253-255 °C
P2.150		284-286 °C
P2.151		273-275 °C
P2.152		255-257 °C

Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.153		274-276 °C
P2.154		255-257 °C
P2.155		267-270 °C
P2.156		265-267 °C

Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.157 (T57.1)		257-259 °C
P2.158		253-255 °C
P2.159		274-276 °C
P2.160 (T57.3)		265-267 °C

Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.161		265-267 °C
P2.162		254-255 °C
P2.163		272-274 °C

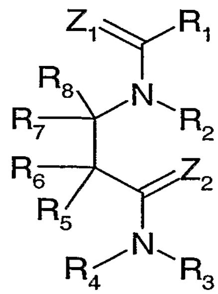
Comp. Nr.	Structure	Phys. Data (MS., NMR, M.P in °C)
P2.164		234-236 °C
P2.165		284-286 °C

Example P11

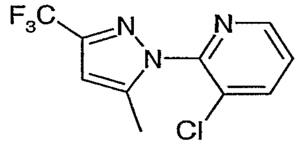
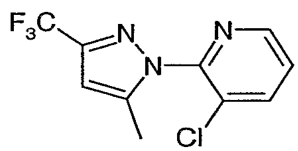
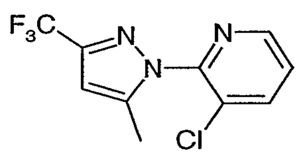
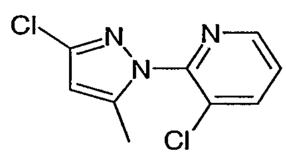
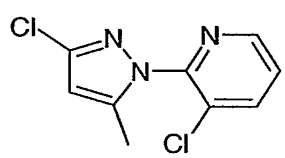
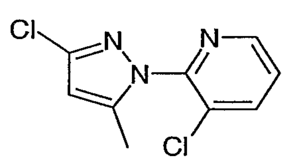
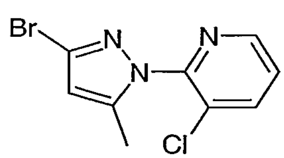
The other compounds listed in the Tables 1 to 85 can also be prepared in a manner analogous to the procedures described in the Examples P1 to P10.

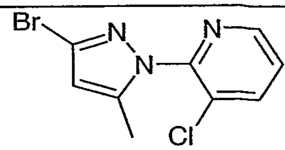
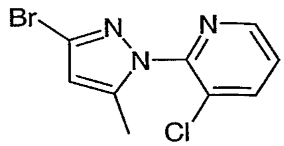
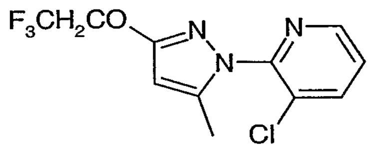
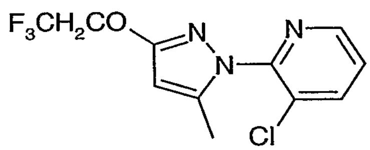
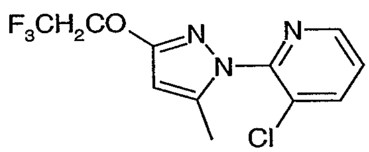
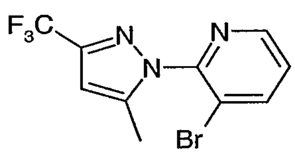
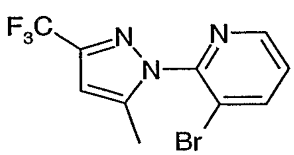
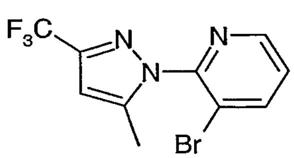
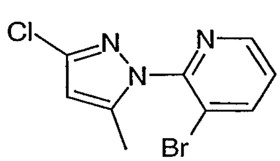
The Table A discloses 338 meanings of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 in a compound of the formula I.

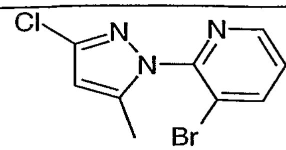
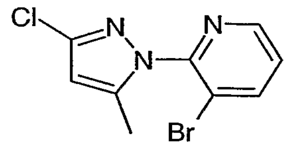
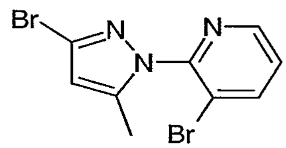
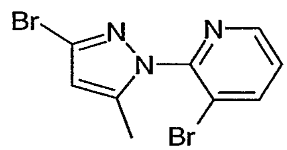
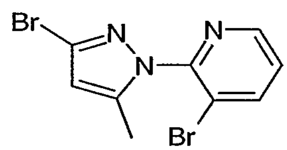
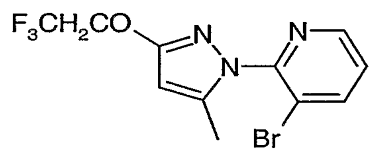
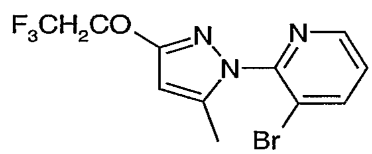
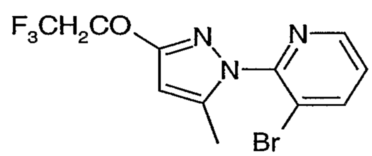
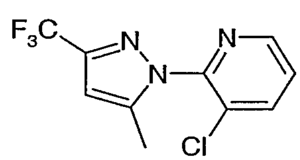
Table A

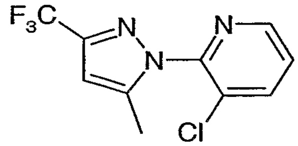
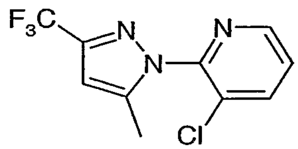
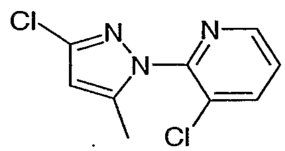
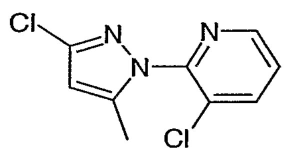
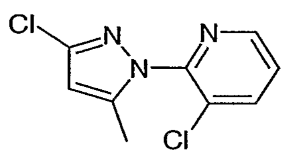
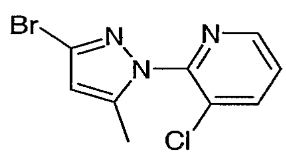
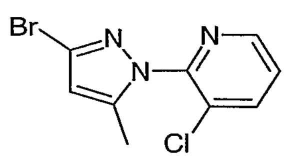
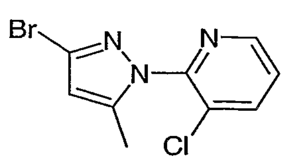
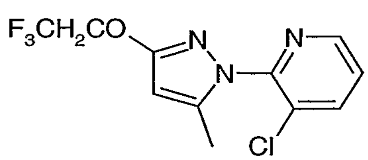


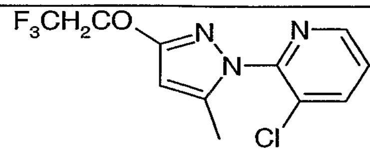
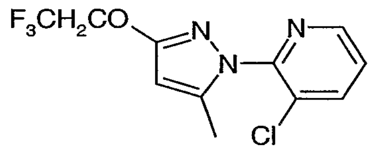
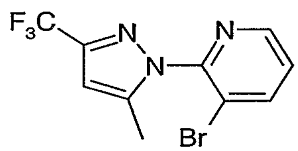
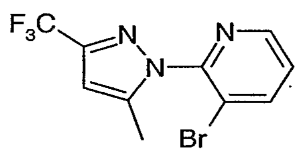
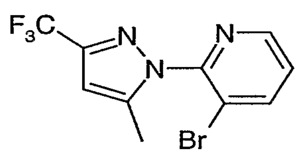
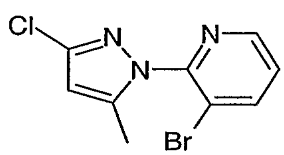
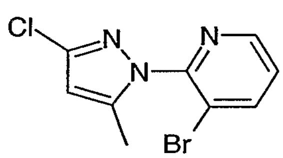
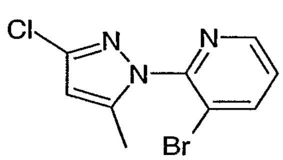
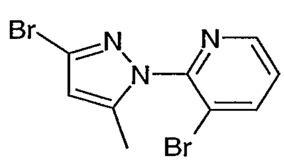
(I)

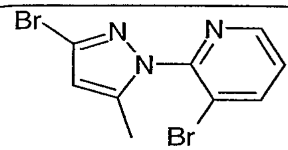
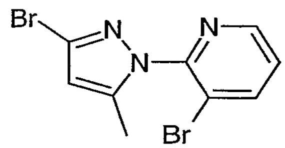
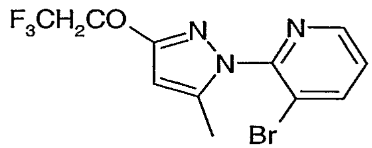
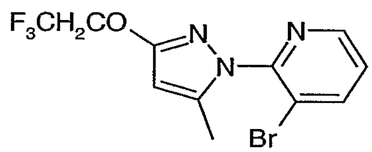
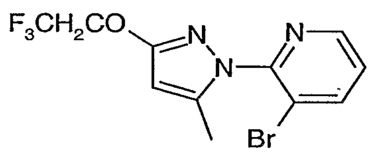
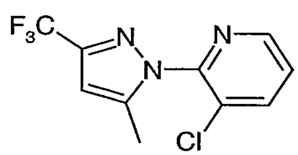
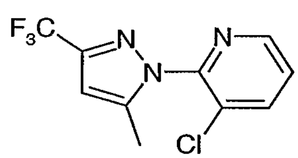
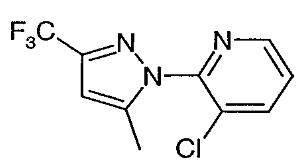
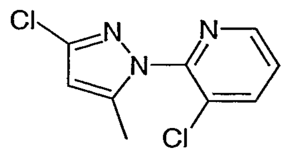
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.1	O	O		H	H	CH_3
A.2	O	O		H	H	CH_2CH_3
A.3	O	O		H	H	$CH(CH_3)_2$
A.4	O	O		H	H	CH_3
A.5	O	O		H	H	CH_2CH_3
A.6	O	O		H	H	$CH(CH_3)_2$
A.7	O	O		H	H	CH_3

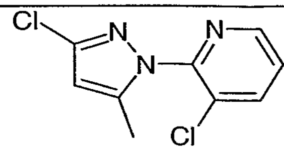
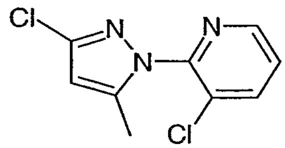
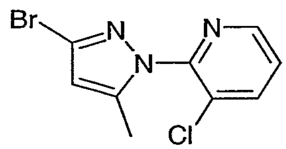
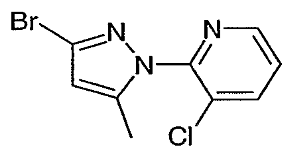
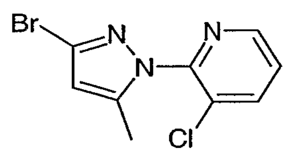
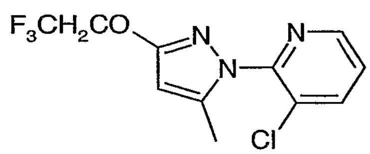
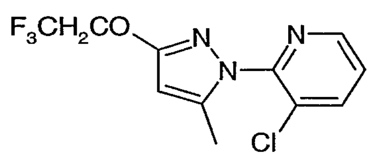
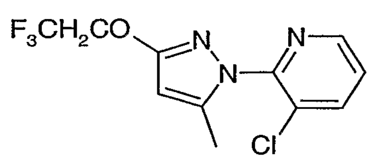
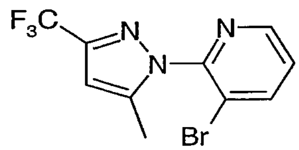
Line	Z_1	Z_2	-R_1	R_2	R_3	R_4
A.8	O	O		H	H	CH_2CH_3
A.9	O	O		H	H	$CH(CH_3)_2$
A.10	O	O		H	H	CH_3
A.11	O	O		H	H	CH_2CH_3
A.12	O	O		H	H	$CH(CH_3)_2$
A.13	O	O		H	H	CH_3
A.14	O	O		H	H	CH_2CH_3
A.15	O	O		H	H	$CH(CH_3)_2$
A.16	O	O		H	H	CH_3

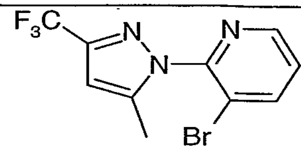
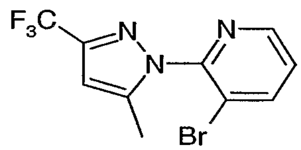
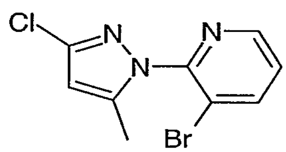
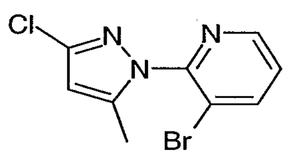
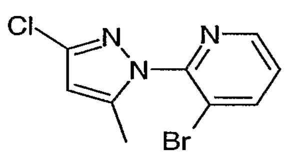
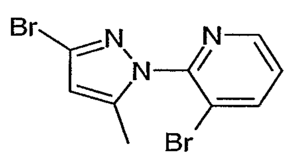
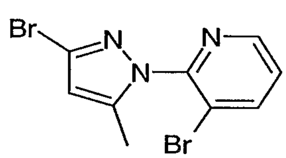
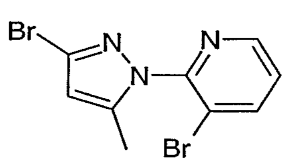
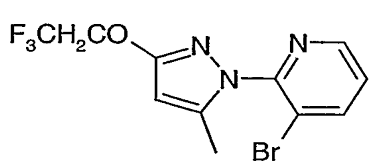
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.17	O	O		H	H	CH_2CH_3
A.18	O	O		H	H	$CH(CH_3)_2$
A.19	O	O		H	H	CH_3
A.20	O	O		H	H	CH_2CH_3
A.21	O	O		H	H	$CH(CH_3)_2$
A.22	O	O		H	H	CH_3
A.23	O	O		H	H	CH_2CH_3
A.24	O	O		H	H	$CH(CH_3)_2$
A.25	S	S		H	H	CH_3

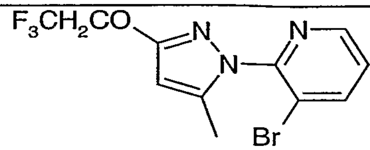
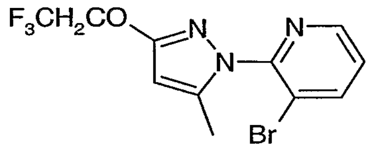
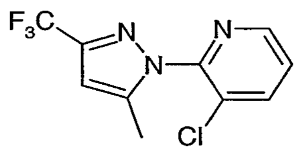
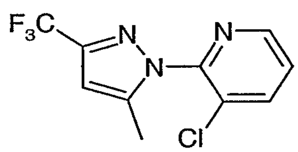
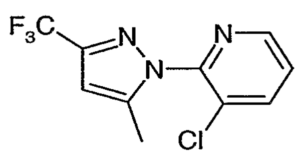
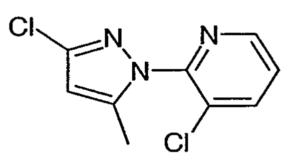
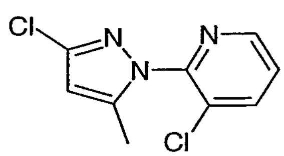
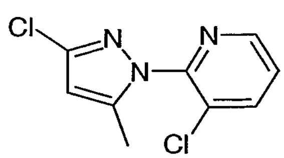
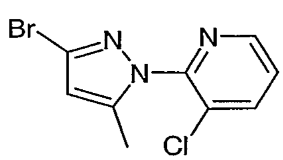
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.26	S	S		H	H	CH_2CH_3
A.27	S	S		H	H	$CH(CH_3)_2$
A.28	S	S		H	H	CH_3
A.29	S	S		H	H	CH_2CH_3
A.30	S	S		H	H	$CH(CH_3)_2$
A.31	S	S		H	H	CH_3
A.32	S	S		H	H	CH_2CH_3
A.33	S	S		H	H	$CH(CH_3)_2$
A.34	S	S		H	H	CH_3

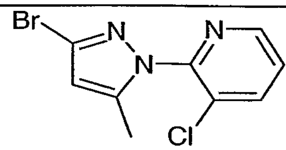
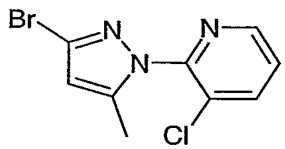
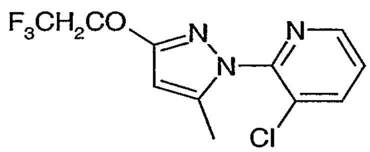
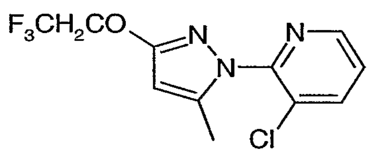
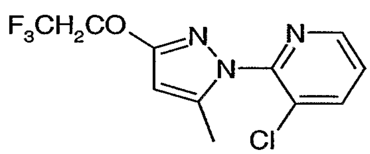
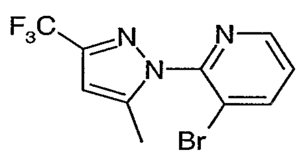
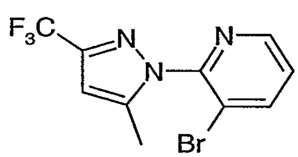
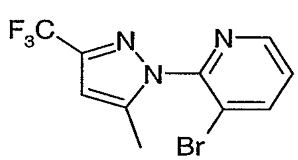
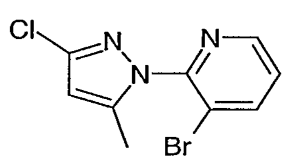
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.35	S	S		H	H	CH_2CH_3
A.36	S	S		H	H	$CH(CH_3)_2$
A.37	S	S		H	H	CH_3
A.38	S	S		H	H	CH_2CH_3
A.39	S	S		H	H	$CH(CH_3)_2$
A.40	S	S		H	H	CH_3
A.41	S	S		H	H	CH_2CH_3
A.42	S	S		H	H	$CH(CH_3)_2$
A.43	S	S		H	H	CH_3

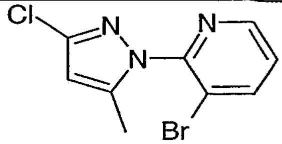
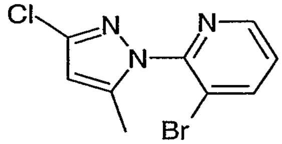
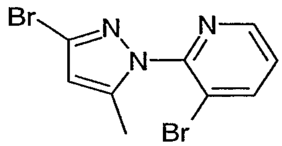
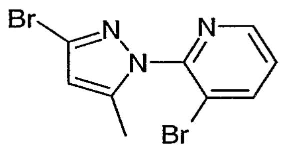
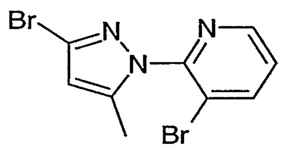
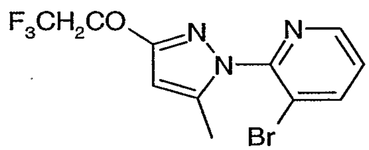
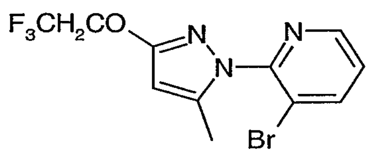
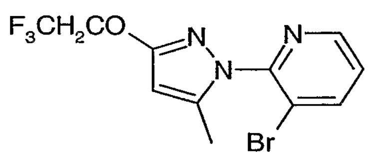
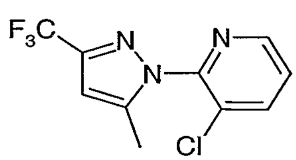
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.44	S	S		H	H	CH_2CH_3
A.45	S	S		H	H	$CH(CH_3)_2$
A.46	S	S		H	H	CH_3
A.47	S	S		H	H	CH_2CH_3
A.48	S	S		H	H	$CH(CH_3)_2$
A.49	O	S		H	H	CH_3
A.50	O	S		H	H	CH_2CH_3
A.51	O	S		H	H	$CH(CH_3)_2$
A.52	O	S		H	H	CH_3

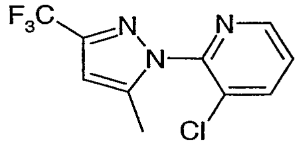
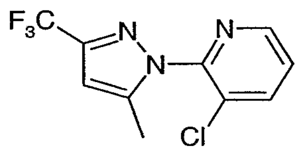
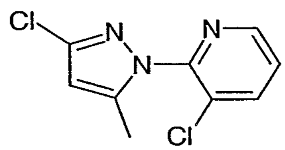
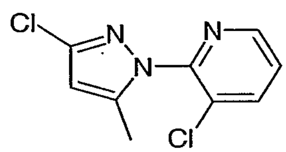
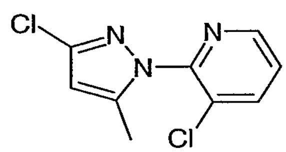
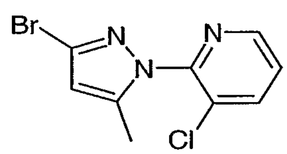
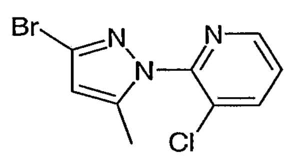
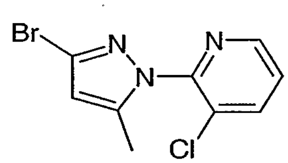
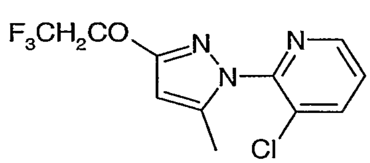
Line	Z_1	Z_2	-R_1	R_2	R_3	R_4
A.53	O	S		H	H	CH_2CH_3
A.54	O	S		H	H	$CH(CH_3)_2$
A.55	O	S		H	H	CH_3
A.56	O	S		H	H	CH_2CH_3
A.57	O	S		H	H	$CH(CH_3)_2$
A.58	O	S		H	H	CH_3
A.59	O	S		H	H	CH_2CH_3
A.60	O	S		H	H	$CH(CH_3)_2$
A.61	O	S		H	H	CH_3

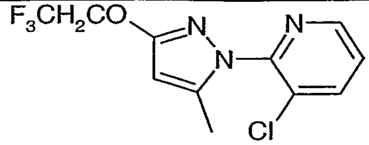
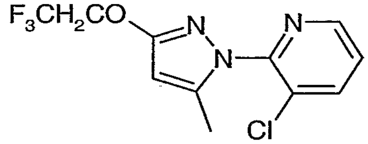
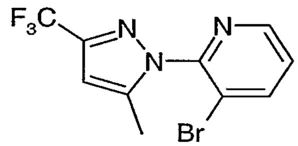
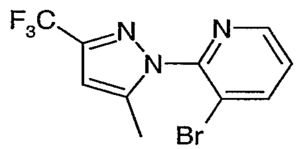
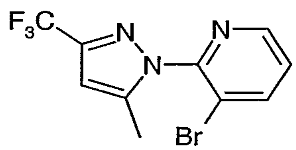
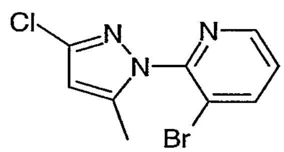
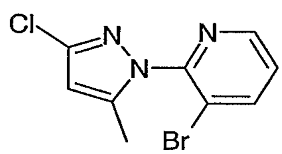
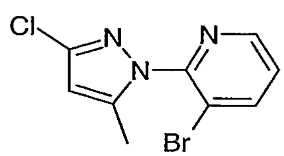
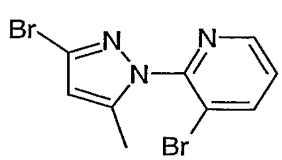
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.62	O	S		H	H	CH_2CH_3
A.63	O	S		H	H	$CH(CH_3)_2$
A.64	O	S		H	H	CH_3
A.65	O	S		H	H	CH_2CH_3
A.66	O	S		H	H	$CH(CH_3)_2$
A.67	O	S		H	H	CH_3
A.68	O	S		H	H	CH_2CH_3
A.69	O	S		H	H	$CH(CH_3)_2$
A.70	O	S		H	H	CH_3

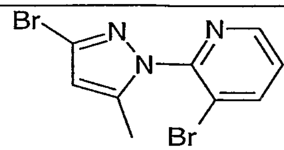
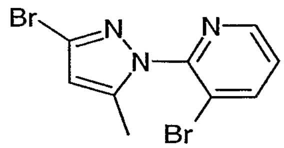
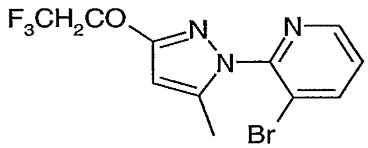
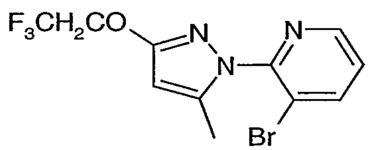
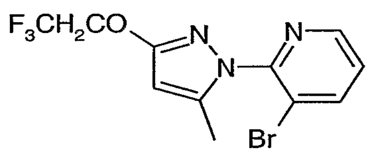
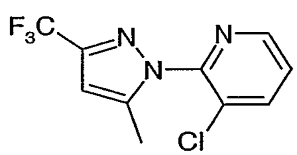
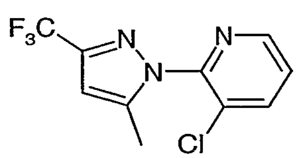
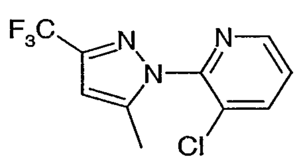
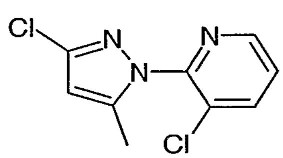
Line	Z_1	Z_2	-R_1	R_2	R_3	R_4
A.71	O	S		H	H	CH_2CH_3
A.72	O	S		H	H	$CH(CH_3)_2$
A.73	S	O		H	H	CH_3
A.74	S	O		H	H	CH_2CH_3
A.75	S	O		H	H	$CH(CH_3)_2$
A.76	S	O		H	H	CH_3
A.77	S	O		H	H	CH_2CH_3
A.78	S	O		H	H	$CH(CH_3)_2$
A.79	S	O		H	H	CH_3

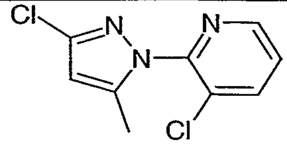
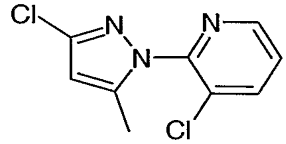
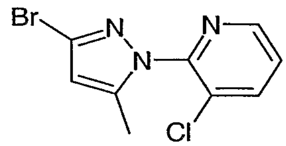
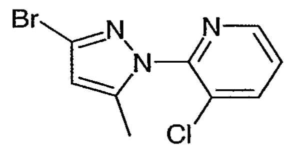
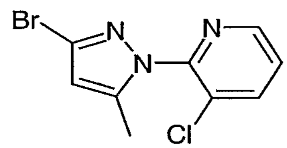
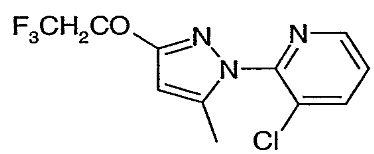
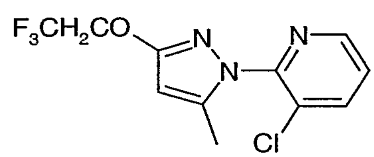
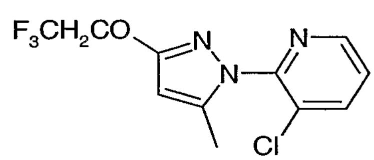
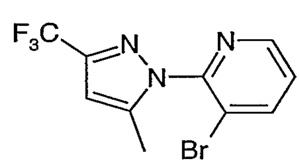
Line	Z_1	Z_2	-R_1	R_2	R_3	R_4
A.80	S	O		H	H	CH_2CH_3
A.81	S	O		H	H	$CH(CH_3)_2$
A.82	S	O		H	H	CH_3
A.83	S	O		H	H	CH_2CH_3
A.84	S	O		H	H	$CH(CH_3)_2$
A.85	S	O		H	H	CH_3
A.86	S	O		H	H	CH_2CH_3
A.87	S	O		H	H	$CH(CH_3)_2$
A.88	S	O		H	H	CH_3

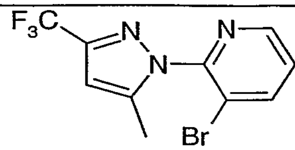
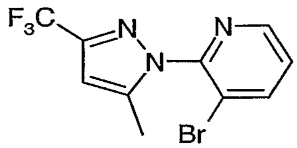
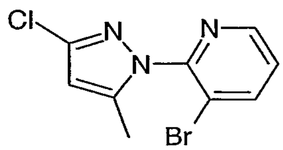
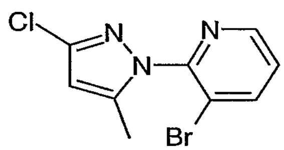
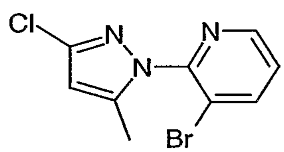
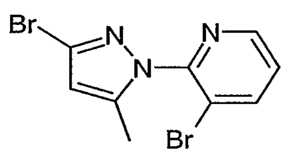
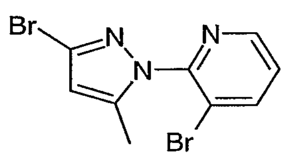
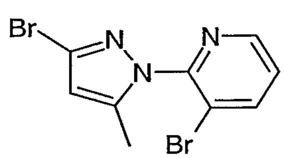
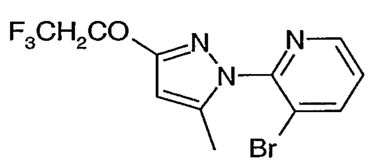
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.89	S	O		H	H	CH_2CH_3
A.90	S	O		H	H	$CH(CH_3)_2$
A.91	S	O		H	H	CH_3
A.92	S	O		H	H	CH_2CH_3
A.93	S	O		H	H	$CH(CH_3)_2$
A.94	S	O		H	H	CH_3
A.95	S	O		H	H	CH_2CH_3
A.96	S	O		H	H	$CH(CH_3)_2$
A.97	O	O		CH_3	H	CH_3

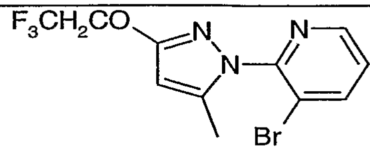
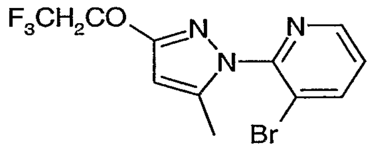
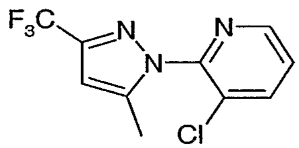
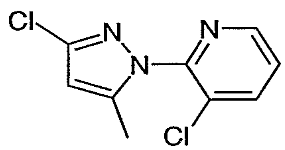
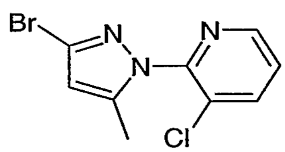
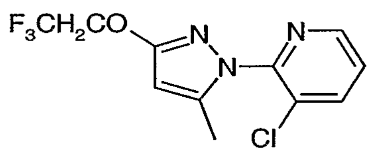
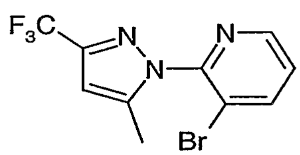
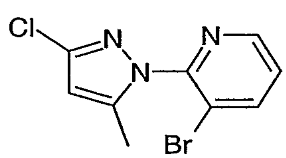
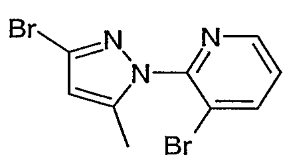
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.98	O	O		CH_3	H	CH_2CH_3
A.99	O	O		CH_3	H	$CH(CH_3)_2$
A.100	O	O		CH_3	H	CH_3
A.101	O	O		CH_3	H	CH_2CH_3
A.102	O	O		CH_3	H	$CH(CH_3)_2$
A.103	O	O		CH_3	H	CH_3
A.104	O	O		CH_3	H	CH_2CH_3
A.105	O	O		CH_3	H	$CH(CH_3)_2$
A.106	O	O		CH_3	H	CH_3

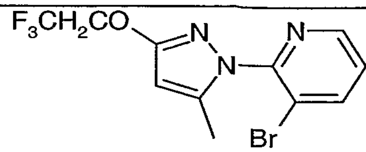
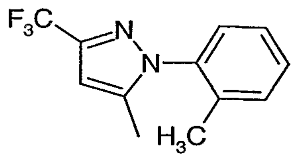
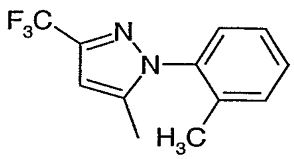
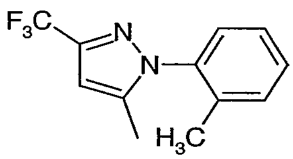
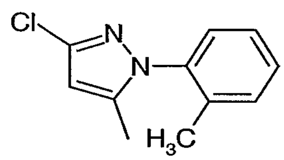
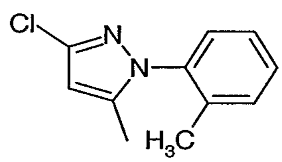
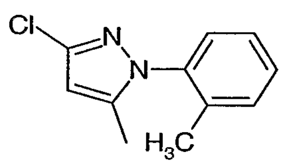
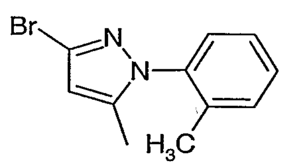
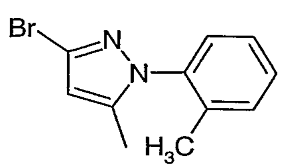
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.107	O	O		CH_3	H	CH_2CH_3
A.108	O	O		CH_3	H	$CH(CH_3)_2$
A.109	O	O		CH_3	H	CH_3
A.110	O	O		CH_3	H	CH_2CH_3
A.111	O	O		CH_3	H	$CH(CH_3)_2$
A.112	O	O		CH_3	H	CH_3
A.113	O	O		CH_3	H	CH_2CH_3
A.114	O	O		CH_3	H	$CH(CH_3)_2$
A.115	O	O		CH_3	H	CH_3

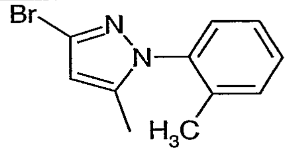
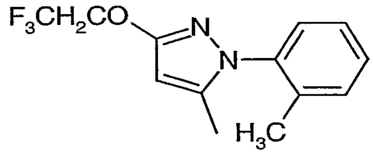
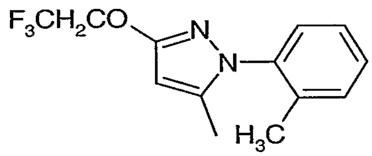
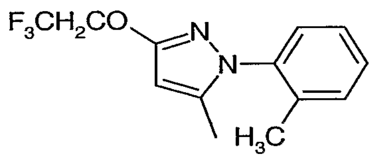
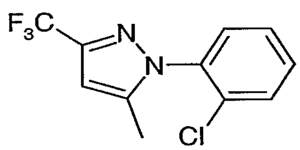
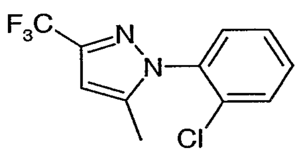
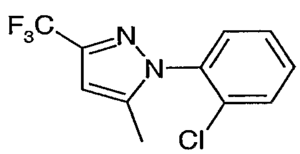
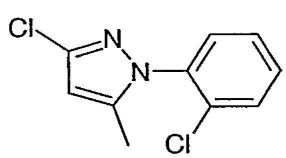
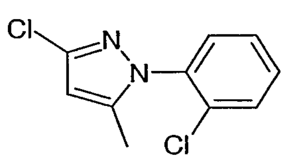
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.116	O	O		CH_3	H	CH_2CH_3
A.117	O	O		CH_3	H	$CH(CH_3)_2$
A.118	O	O		CH_3	H	CH_3
A.119	O	O		CH_3	H	CH_2CH_3
A.120	O	O		CH_3	H	$CH(CH_3)_2$
A.121	O	O		H	CH_3	CH_3
A.122	O	O		H	CH_3	CH_2CH_3
A.123	O	O		H	CH_3	$CH(CH_3)_2$
A.124	O	O		H	CH_3	CH_3

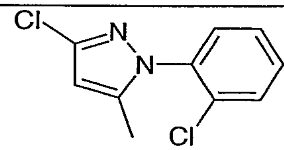
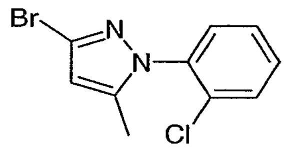
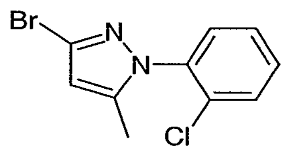
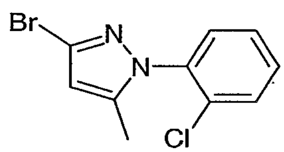
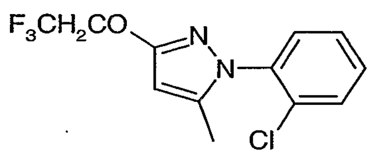
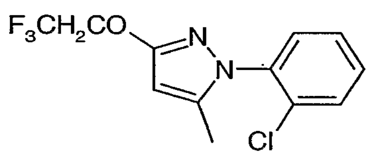
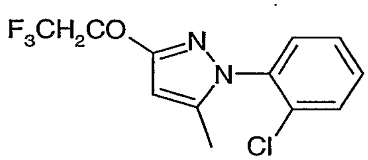
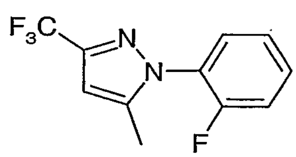
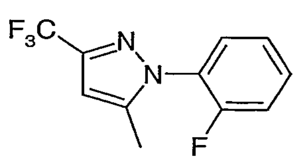
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.125	O	O		H	CH_3	CH_2CH_3
A.126	O	O		H	CH_3	$CH(CH_3)_2$
A.127	O	O		H	CH_3	CH_3
A.128	O	O		H	CH_3	CH_2CH_3
A.129	O	O		H	CH_3	$CH(CH_3)_2$
A.130	O	O		H	CH_3	CH_3
A.131	O	O		H	CH_3	CH_2CH_3
A.132	O	O		H	CH_3	$CH(CH_3)_2$
A.133	O	O		H	CH_3	CH_3

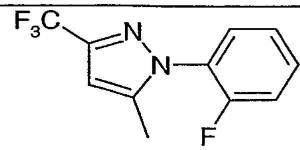
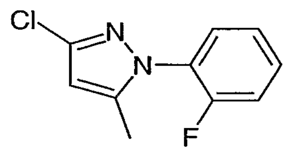
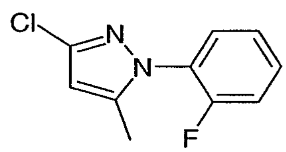
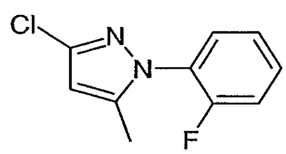
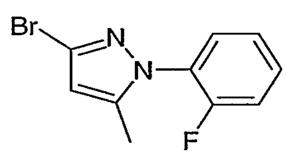
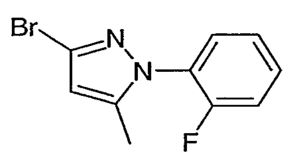
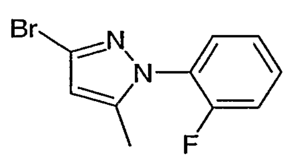
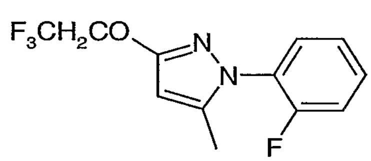
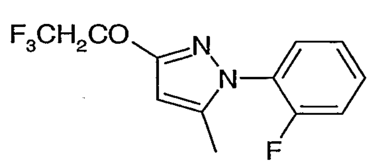
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.134	O	O		H	CH_3	CH_2CH_3
A.135	O	O		H	CH_3	$CH(CH_3)_2$
A.136	O	O		H	CH_3	CH_3
A.137	O	O		H	CH_3	CH_2CH_3
A.138	O	O		H	CH_3	$CH(CH_3)_2$
A.139	O	O		H	CH_3	CH_3
A.140	O	O		H	CH_3	CH_2CH_3
A.141	O	O		H	CH_3	$CH(CH_3)_2$
A.142	O	O		H	CH_3	CH_3

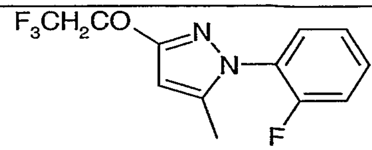
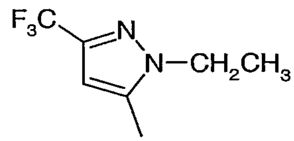
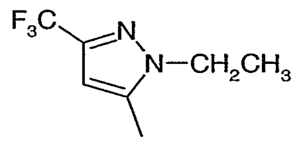
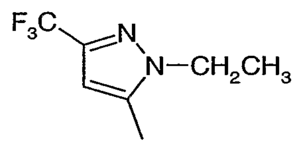
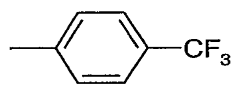
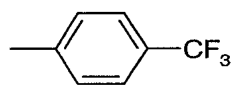
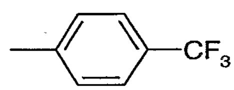
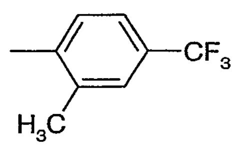
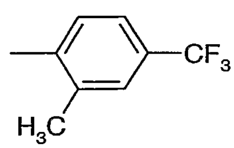
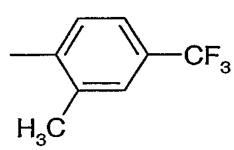
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.143	O	O		H	CH_3	CH_2CH_3
A.144	O	O		H	CH_3	$CH(CH_3)_2$
A.145	O	O		H	H	$C(CH_3)_3$
A.146	O	O		H	H	$C(CH_3)_3$
A.147	O	O		H	H	$C(CH_3)_3$
A.148	O	O		H	H	$C(CH_3)_3$
A.149	O	O		H	H	$C(CH_3)_3$
A.150	O	O		H	H	$C(CH_3)_3$
A.151	O	O		H	H	$C(CH_3)_3$

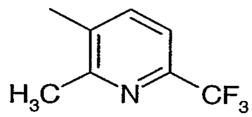
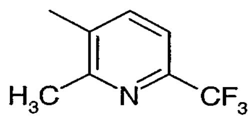
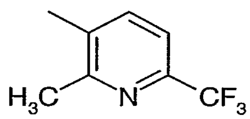
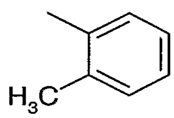
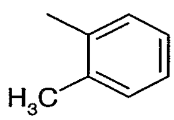
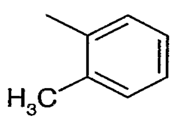
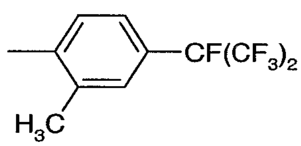
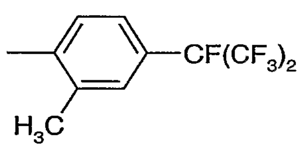
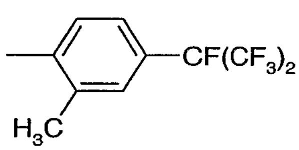
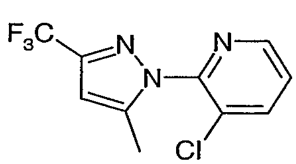
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.152	O	O		H	H	$C(CH_3)_3$
A.153	O	O		H	H	CH_3
A.154	O	O		H	H	CH_2CH_3
A.155	O	O		H	H	$CH(CH_3)_2$
A.156	O	O		H	H	CH_3
A.157	O	O		H	H	CH_2CH_3
A.158	O	O		H	H	$CH(CH_3)_2$
A.159	O	O		H	H	CH_3
A.160	O	O		H	H	CH_2CH_3

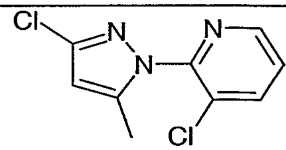
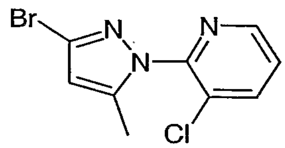
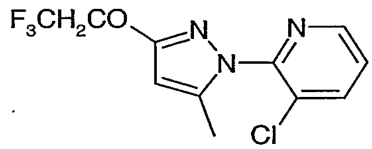
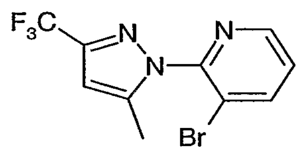
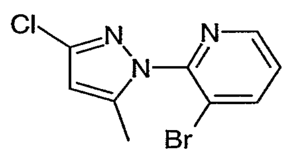
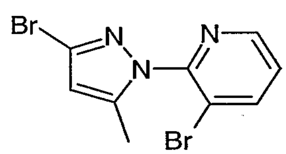
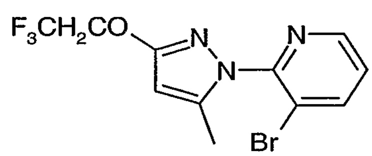
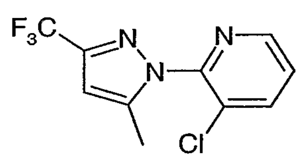
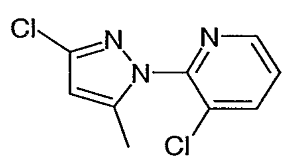
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.161	O	O		H	H	$CH(CH_3)_2$
A.162	O	O		H	H	CH_3
A.163	O	O		H	H	CH_2CH_3
A.164	O	O		H	H	$CH(CH_3)_2$
A.165	O	O		H	H	CH_3
A.166	O	O		H	H	CH_2CH_3
A.167	O	O		H	H	$CH(CH_3)_2$
A.168	O	O		H	H	CH_3
A.169	O	O		H	H	CH_2CH_3

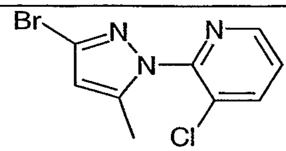
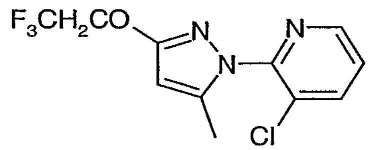
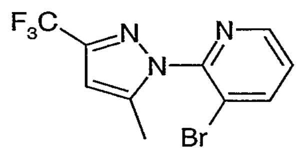
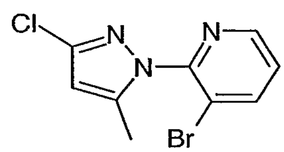
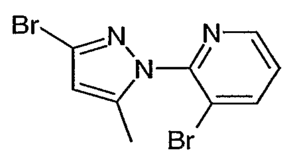
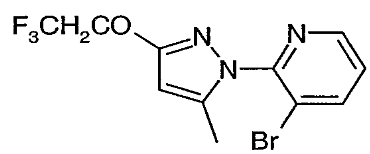
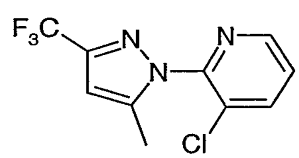
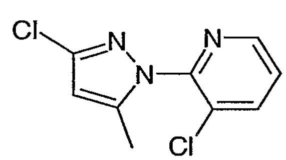
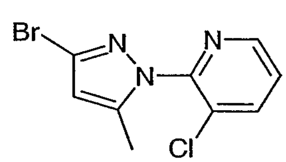
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.170	O	O		H	H	$CH(CH_3)_2$
A.171	O	O		H	H	CH_3
A.172	O	O		H	H	CH_2CH_3
A.173	O	O		H	H	$CH(CH_3)_2$
A.174	O	O		H	H	CH_3
A.175	O	O		H	H	CH_2CH_3
A.176	O	O		H	H	$CH(CH_3)_2$
A.177	O	O		H	H	CH_3
A.178	O	O		H	H	CH_2CH_3

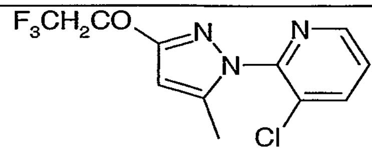
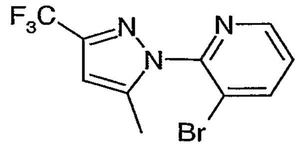
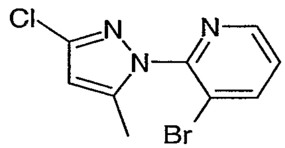
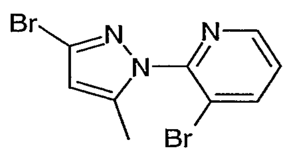
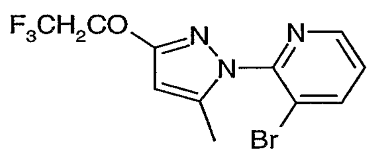
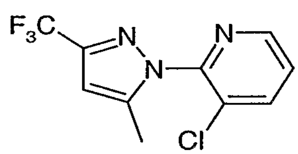
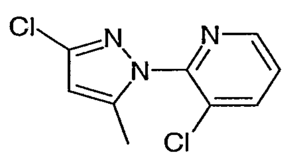
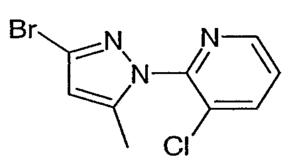
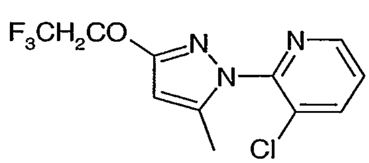
Line	Z_1	Z_2	-R_1	R_2	R_3	R_4
A.179	O	O		H	H	$CH(CH_3)_2$
A.180	O	O		H	H	CH_3
A.181	O	O		H	H	CH_2CH_3
A.182	O	O		H	H	$CH(CH_3)_2$
A.183	O	O		H	H	CH_3
A.184	O	O		H	H	CH_2CH_3
A.185	O	O		H	H	$CH(CH_3)_2$
A.186	O	O		H	H	CH_3
A.187	O	O		H	H	CH_2CH_3

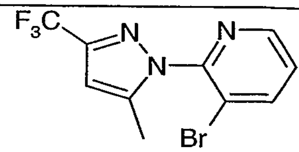
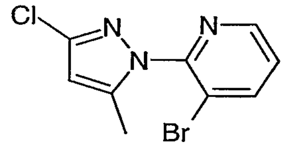
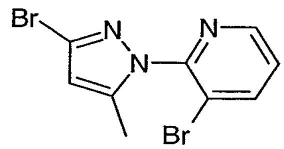
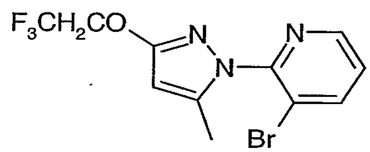
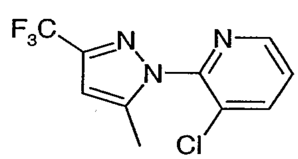
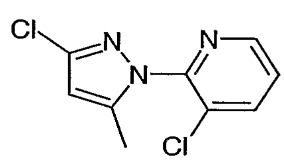
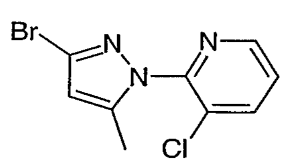
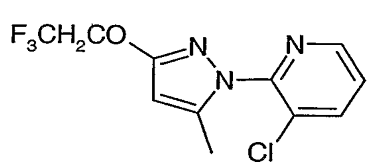
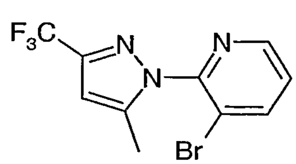
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.188	O	O		H	H	$CH(CH_3)_2$
A.189	O	O		H	H	CH_3
A.190	O	O		H	H	CH_2CH_3
A.191	O	O		H	H	$CH(CH_3)_2$
A.192	O	O		H	H	CH_3
A.193	O	O		H	H	CH_2CH_3
A.194	O	O		H	H	$CH(CH_3)_2$
A.195	O	O		H	H	CH_3
A.196	O	O		H	H	CH_2CH_3
A.197	O	O		H	H	$CH(CH_3)_2$

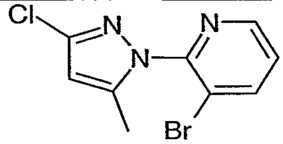
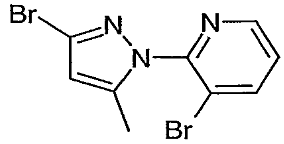
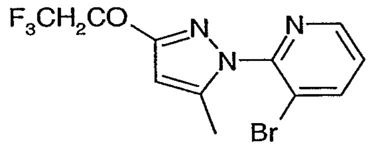
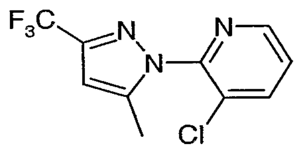
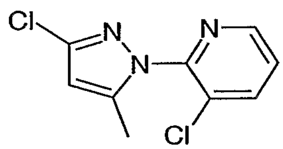
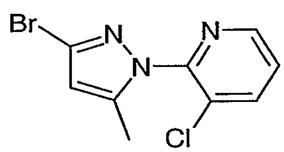
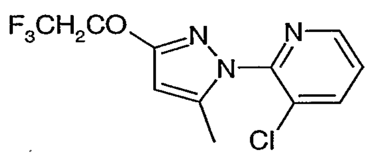
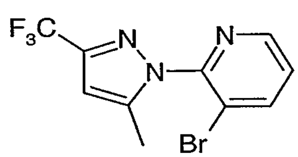
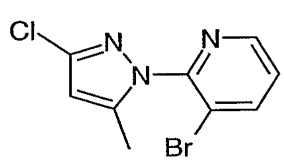
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.198	O	O		H	H	CH_3
A.199	O	O		H	H	CH_2CH_3
A.200	O	O		H	H	$CH(CH_3)_2$
A.201	O	O		H	H	CH_3
A.202	O	O		H	H	CH_2CH_3
A.203	O	O		H	H	$CH(CH_3)_2$
A.204	O	O		H	H	CH_3
A.205	O	O		H	H	CH_2CH_3
A.206	O	O		H	H	$CH(CH_3)_2$
A.207	O	O		H	H	Cyclopropyl

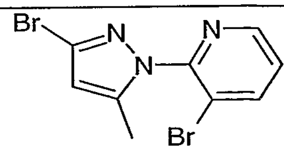
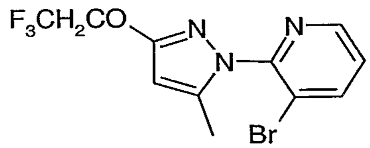
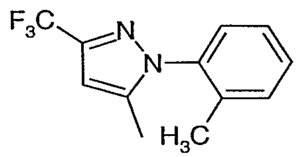
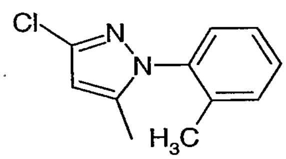
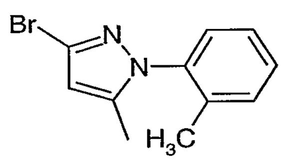
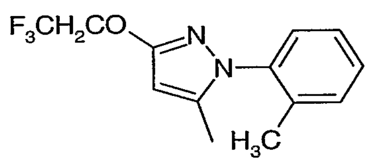
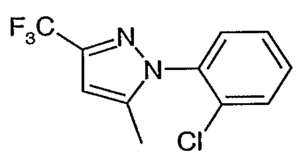
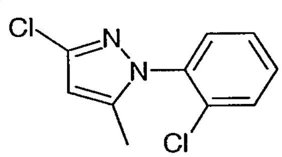
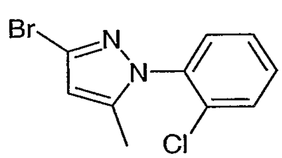
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.208	O	O		H	H	Cyclopropyl
A.209	O	O		H	H	Cyclopropyl
A.210	O	O		H	H	Cyclopropyl
A.211	O	O		H	H	Cyclopropyl
A.212	O	O		H	H	Cyclopropyl
A.213	O	O		H	H	Cyclopropyl
A.214	O	O		H	H	Cyclopropyl
A.215	S	S		H	H	Cyclopropyl
A.216	S	S		H	H	Cyclopropyl

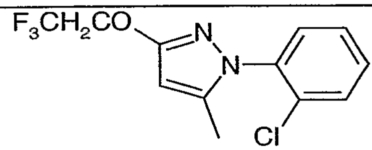
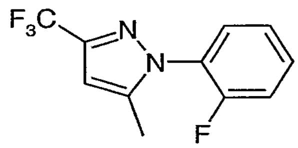
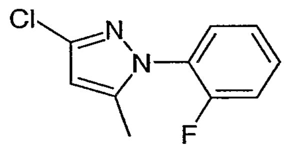
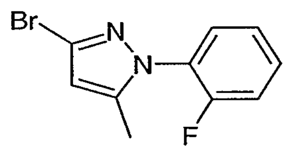
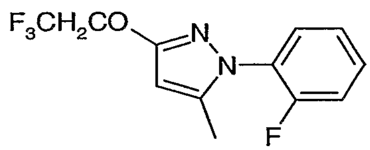
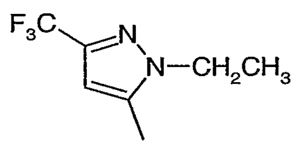
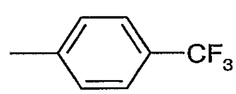
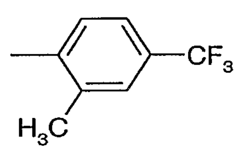
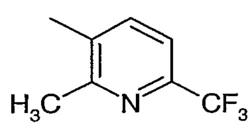
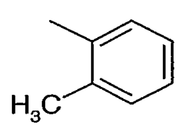
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.217	S	S		H	H	Cyclopropyl
A.218	S	S		H	H	Cyclopropyl
A.219	S	S		H	H	Cyclopropyl
A.220	S	S		H	H	Cyclopropyl
A.221	S	S		H	H	Cyclopropyl
A.222	S	S		H	H	Cyclopropyl
A.223	O	S		H	H	Cyclopropyl
A.224	O	S		H	H	Cyclopropyl
A.225	O	S		H	H	Cyclopropyl

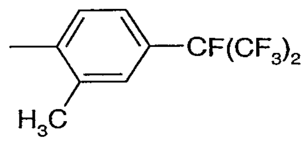
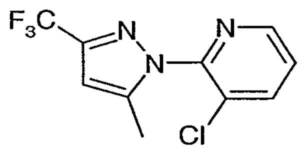
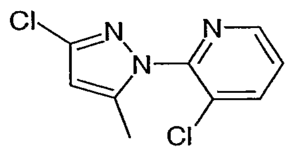
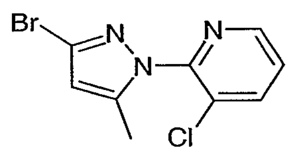
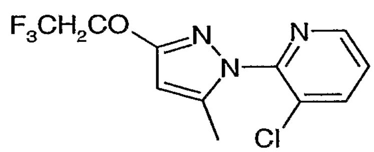
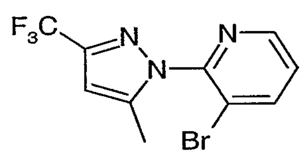
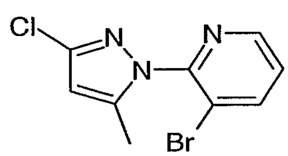
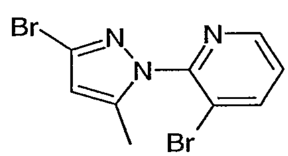
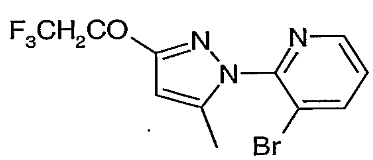
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.226	O	S		H	H	Cyclopropyl
A.227	O	S		H	H	Cyclopropyl
A.228	O	S		H	H	Cyclopropyl
A.229	O	S		H	H	Cyclopropyl
A.230	O	S		H	H	Cyclopropyl
A.231	S	O		H	H	Cyclopropyl
A.232	S	O		H	H	Cyclopropyl
A.233	S	O		H	H	Cyclopropyl
A.234	S	O		H	H	Cyclopropyl

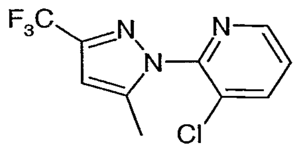
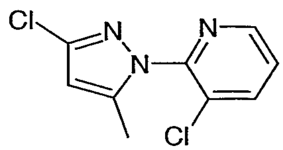
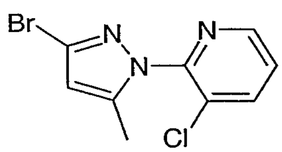
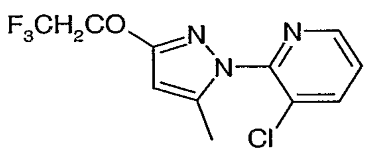
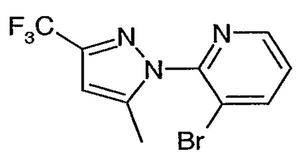
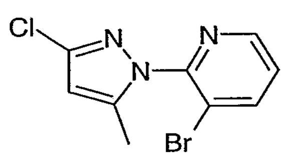
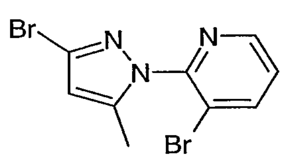
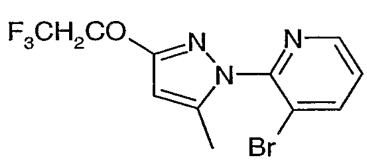
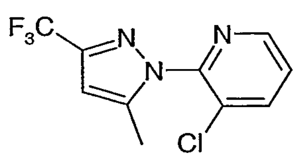
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.235	S	O		H	H	Cyclopropyl
A.236	S	O		H	H	Cyclopropyl
A.237	S	O		H	H	Cyclopropyl
A.238	S	O		H	H	Cyclopropyl
A.239	O	O		CH_3	H	Cyclopropyl
A.240	O	O		CH_3	H	Cyclopropyl
A.241	O	O		CH_3	H	Cyclopropyl
A.242	O	O		CH_3	H	Cyclopropyl
A.243	O	O		CH_3	H	Cyclopropyl

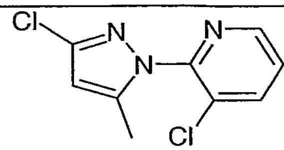
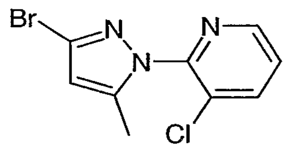
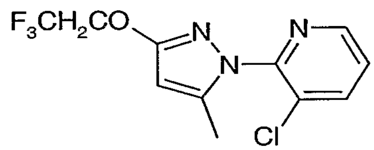
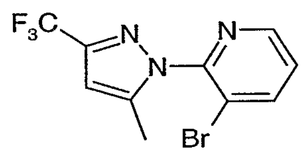
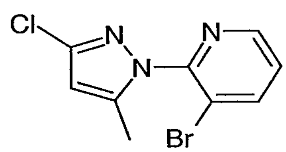
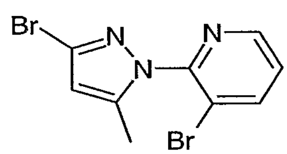
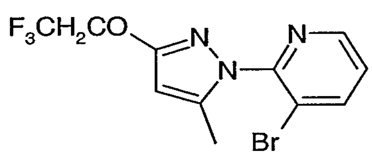
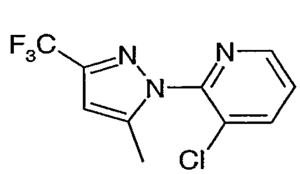
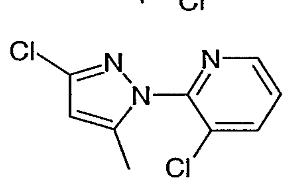
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.244	O	O		CH_3	H	Cyclopropyl
A.245	O	O		CH_3	H	Cyclopropyl
A.246	O	O		CH_3	H	Cyclopropyl
A.247	O	O		H	CH_3	Cyclopropyl
A.248	O	O		H	CH_3	Cyclopropyl
A.249	O	O		H	CH_3	Cyclopropyl
A.250	O	O		H	CH_3	Cyclopropyl
A.251	O	O		H	CH_3	Cyclopropyl
A.252	O	O		H	CH_3	Cyclopropyl

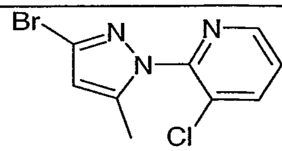
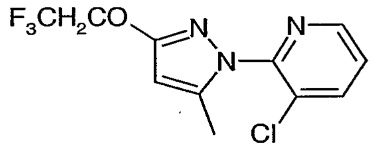
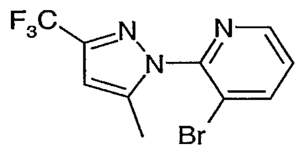
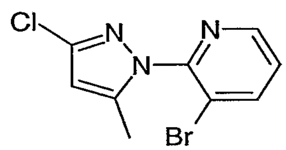
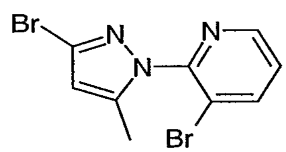
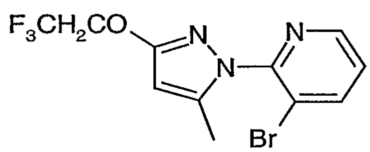
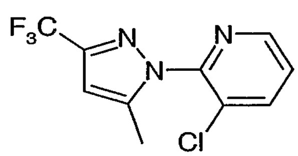
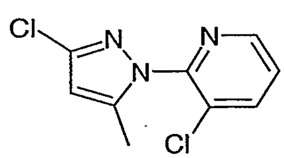
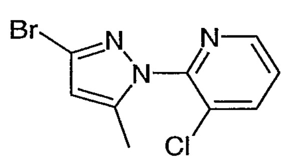
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.253	O	O		H	CH_3	Cyclopropyl
A.254	O	O		H	CH_3	Cyclopropyl
A.255	O	O		H	H	Cyclopropyl
A.256	O	O		H	H	Cyclopropyl
A.257	O	O		H	H	Cyclopropyl
A.258	O	O		H	H	Cyclopropyl
A.259	O	O		H	H	Cyclopropyl
A.260	O	O		H	H	Cyclopropyl
A.261	O	O		H	H	Cyclopropyl

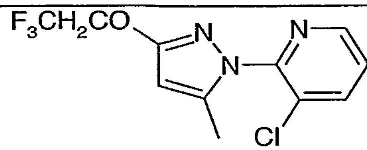
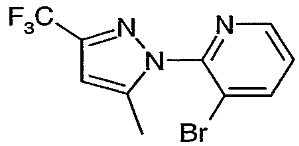
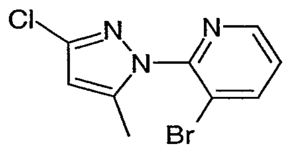
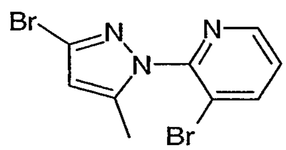
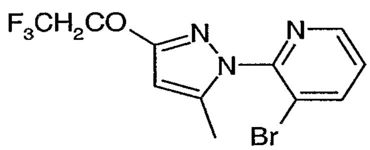
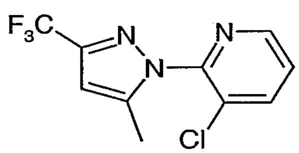
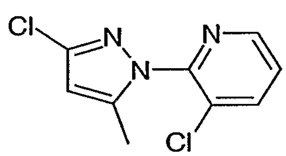
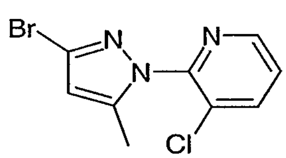
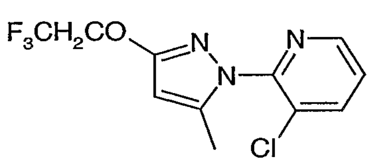
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.262	O	O		H	H	Cyclopropyl
A.263	O	O		H	H	Cyclopropyl
A.264	O	O		H	H	Cyclopropyl
A.265	O	O		H	H	Cyclopropyl
A.266	O	O		H	H	Cyclopropyl
A.267	O	O		H	H	Cyclopropyl
A.268	O	O		H	H	Cyclopropyl
A.269	O	O		H	H	Cyclopropyl
A.270	O	O		H	H	Cyclopropyl
A.271	O	O		H	H	Cyclopropyl

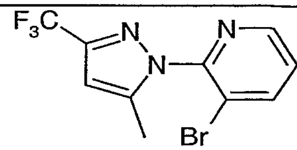
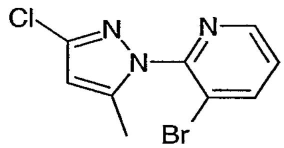
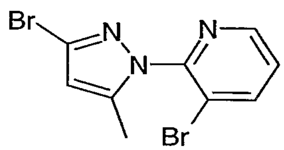
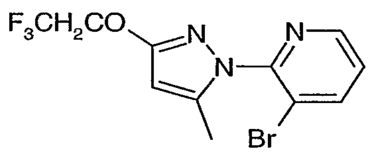
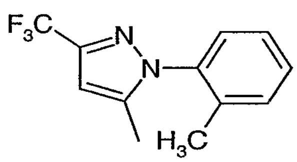
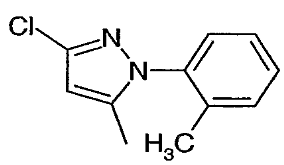
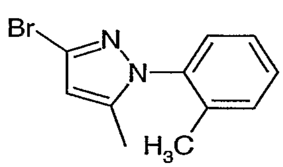
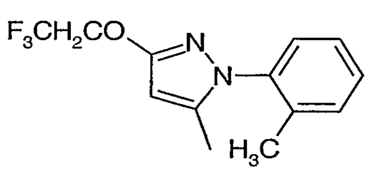
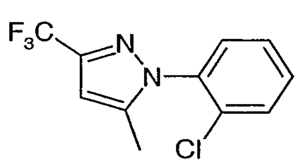
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.272	O	O		H	H	Cyclopropyl
A.273	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.274	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.275	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.276	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.277	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.278	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.279	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.280	O	O		H	H	$C(CH_3)_2CH_2SCH_3$

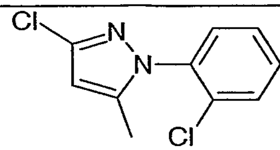
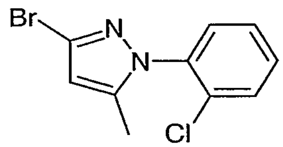
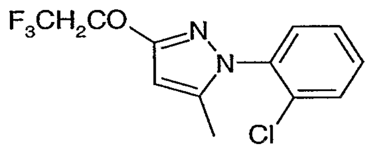
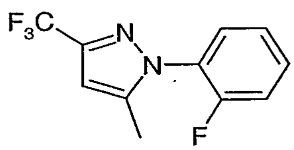
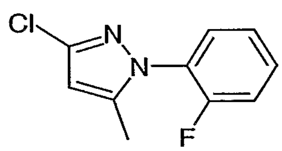
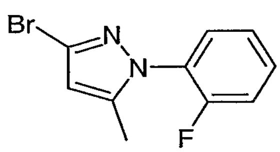
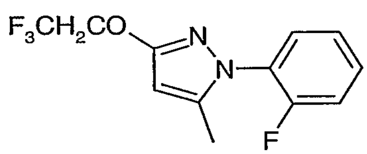
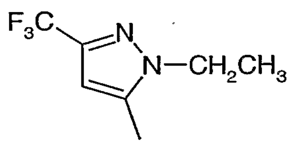
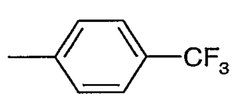
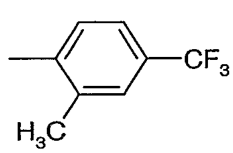
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.281	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.282	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.283	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.284	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.285	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.286	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.287	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.288	S	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.289	O	S		H	H	$C(CH_3)_2CH_2SCH_3$

Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.290	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.291	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.292	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.293	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.294	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.295	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.296	O	S		H	H	$C(CH_3)_2CH_2SCH_3$
A.297	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.298	S	O		H	H	$C(CH_3)_2CH_2SCH_3$

Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.299	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.300	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.301	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.302	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.303	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.304	S	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.305	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.306	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.307	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$

Line	Z_1	Z_2	-R_1	R_2	R_3	R_4
A.308	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.309	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.310	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.311	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.312	O	O		CH_3	H	$C(CH_3)_2CH_2SCH_3$
A.313	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.314	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.315	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.316	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$

Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.317	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.318	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.319	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.320	O	O		H	CH_3	$C(CH_3)_2CH_2SCH_3$
A.321	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.322	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.323	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.324	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.325	O	O		H	H	$C(CH_3)_2CH_2SCH_3$

Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.326	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.327	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.328	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.329	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.330	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.331	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.332	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.333	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.334	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.335	O	O		H	H	$C(CH_3)_2CH_2SCH_3$

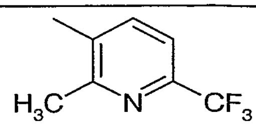
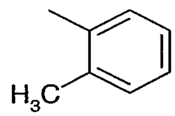
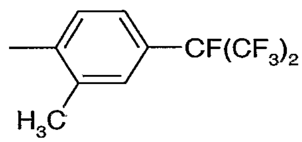
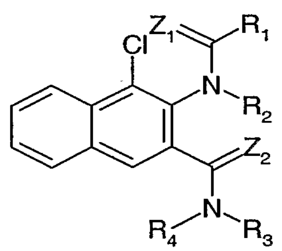
Line	Z_1	Z_2	$-R_1$	R_2	R_3	R_4
A.336	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.337	O	O		H	H	$C(CH_3)_2CH_2SCH_3$
A.338	O	O		H	H	$C(CH_3)_2CH_2SCH_3$

Table 1: This table discloses the 338 compounds T1.1 to T1.338 of the formula

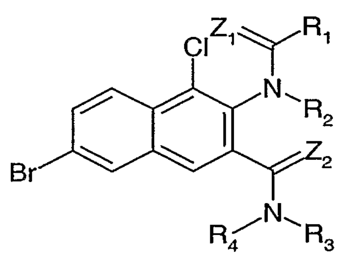


(T1),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

For example, the specific compound T1.23 is the compound of the formula T1, in which each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the line A.23 of the Table A. According to the same system, also all of the other 337 specific compounds disclosed in the Table 1 as well as all of the specific compounds disclosed in the Tables 2 to 85 are specified analogously.

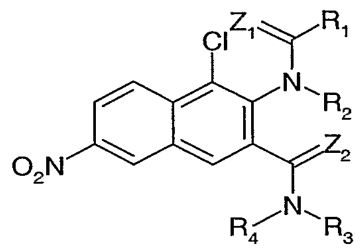
Table 2: This table discloses the 338 compounds T2.1 to T2.338 of the formula



(T2),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

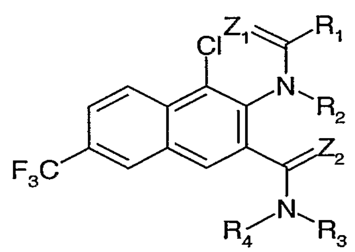
<u>Table 3:</u> This table discloses the 338 compounds T3.1 to T3.338 of the formula



(T3),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

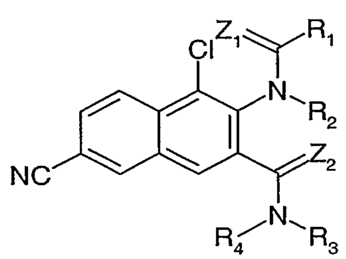
<u>Table 4:</u> This table discloses the 338 compounds T4.1 to T4.338 of the formula



(T4),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

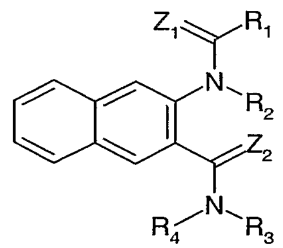
<u>Table 5:</u> This table discloses the 338 compounds T5.1 to T5.338 of the formula



(T5),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

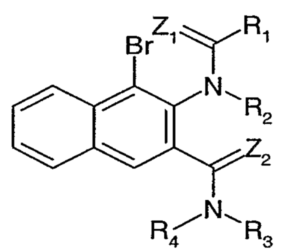
Table 6: This table discloses the 338 compounds T6.1 to T6.338 of the formula



(T6),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

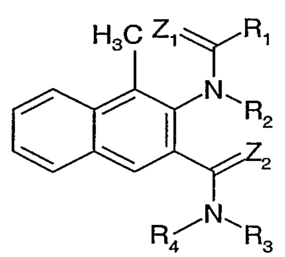
Table 7: This table discloses the 338 compounds T7.1 to T7.338 of the formula



(T7),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

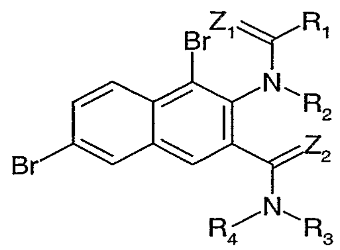
Table 8: This table discloses the 338 compounds T8.1 to T8.338 of the formula



(T8),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

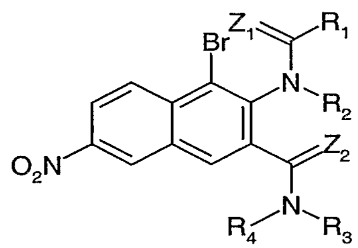
Table 9: This table discloses the 338 compounds T9.1 to T9.338 of the formula



(T9),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

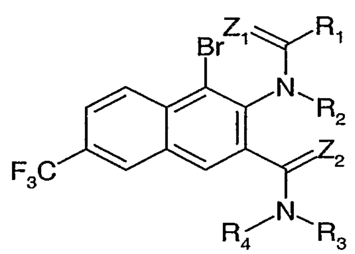
Table 10: This table discloses the 338 compounds T10.1 to T10.338 of the formula



(T10),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

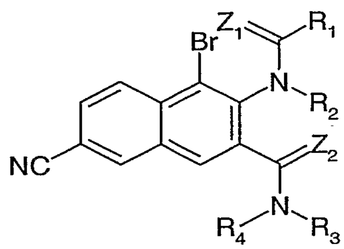
Table 11: This table discloses the 338 compounds T11.1 to T11.338 of the formula



(T11),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

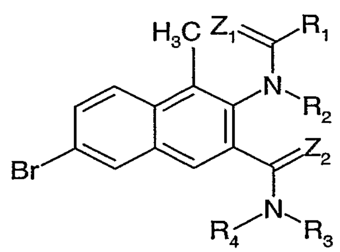
Table 12: This table discloses the 338 compounds T12.1 to T12.338 of the formula



(T12),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

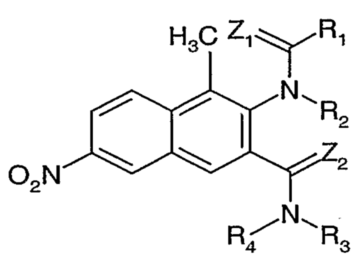
Table 13: This table discloses the 338 compounds T13.1 to T13.338 of the formula



(T13),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

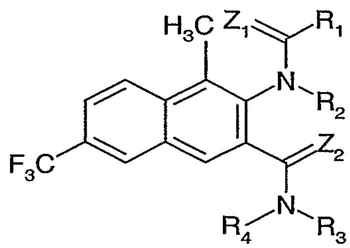
Table 14: This table discloses the 338 compounds T14.1 to T14.338 of the formula



(T14),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

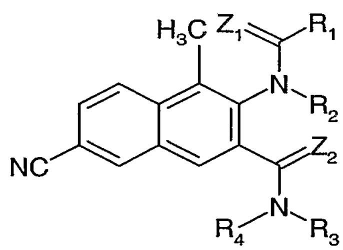
Table 15: This table discloses the 338 compounds T15.1 to T15.338 of the formula



(T15),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

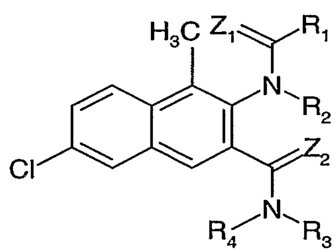
Table 16: This table discloses the 338 compounds T16.1 to T16.338 of the formula



(T16),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

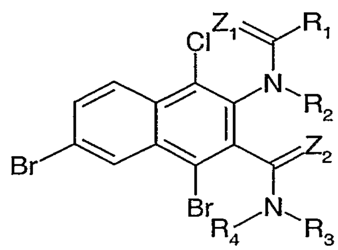
Table 17: This table discloses the 338 compounds T17.1 to T17.338 of the formula



(T17),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

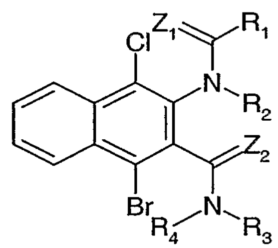
Table 18: This table discloses the 338 compounds T18.1 to T18.338 of the formula



(T18),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

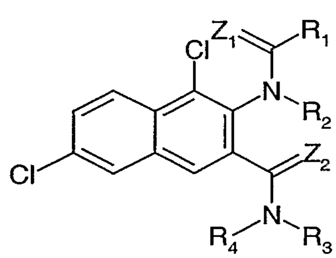
<u>Table 19:</u> This table discloses the 338 compounds T19.1 to T19.338 of the formula



(T19),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

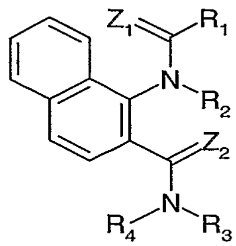
<u>Table 20:</u> This table discloses the 338 compounds T20.1 to T20.338 of the formula



(T20),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

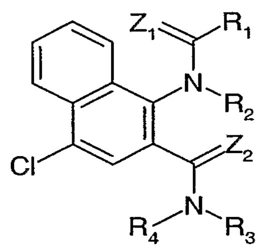
<u>Table 21:</u> This table discloses the 338 compounds T21.1 to T21.338 of the formula



(T21),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

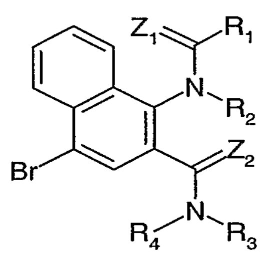
Table 22: This table discloses the 338 compounds T22.1 to T22.338 of the formula



(T22),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

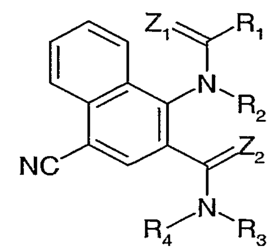
Table 23: This table discloses the 338 compounds T23.1 to T23.338 of the formula



(T23),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

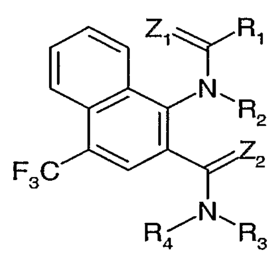
Table 24: This table discloses the 338 compounds T24.1 to T24.338 of the formula



(T24),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

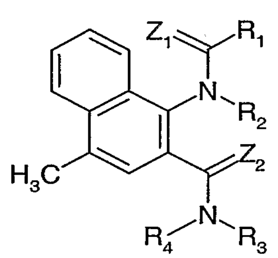
Table 25: This table discloses the 338 compounds T25.1 to T25.338 of the formula



(T25),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

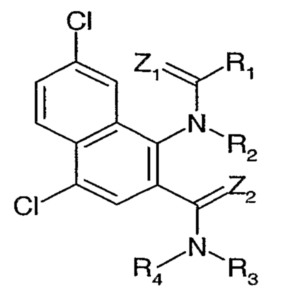
Table 26: This table discloses the 338 compounds T26.1 to T26.338 of the formula



(T26),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

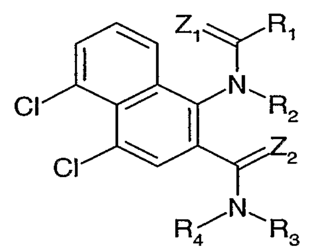
Table 27: This table discloses the 338 compounds T27.1 to T27.338 of the formula



(T27),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

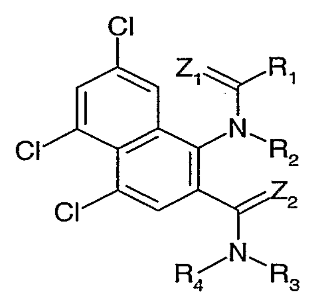
Table 28: This table discloses the 338 compounds T28.1 to T28.338 of the formula



(T28),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

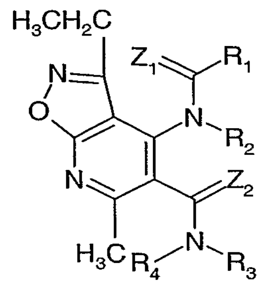
Table 29: This table discloses the 338 compounds T29.1 to T29.338 of the formula



(T29),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

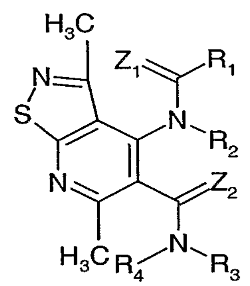
Table 30: This table discloses the 338 compounds T30.1 to T30.338 of the formula



(T30),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

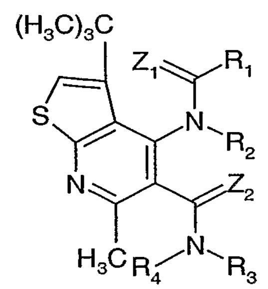
Table 31: This table discloses the 338 compounds T31.1 to T31.338 of the formula



(T31),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

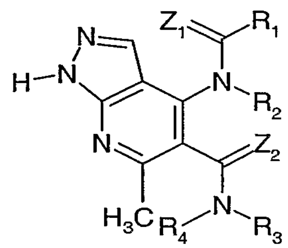
Table 32: This table discloses the 338 compounds T32.1 to T32.338 of the formula



(T32),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

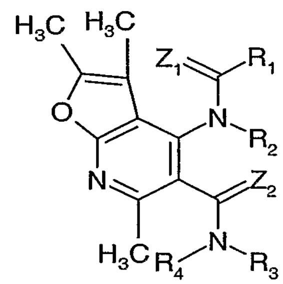
Table 33: This table discloses the 338 compounds T33.1 to T33.338 of the formula



(T33),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

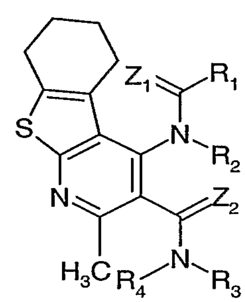
Table 34: This table discloses the 338 compounds T34.1 to T34.338 of the formula



(T34),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

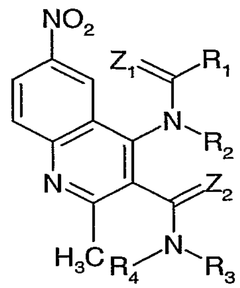
Table 35: This table discloses the 338 compounds T35.1 to T35.338 of the formula



(T35),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

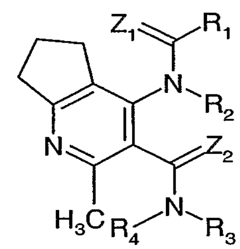
Table 36: This table discloses the 338 compounds T36.1 to T36.338 of the formula



(T36),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

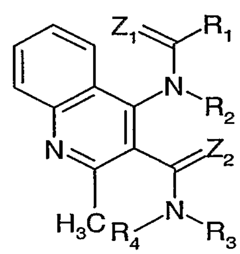
Table 37: This table discloses the 338 compounds T37.1 to T37.338 of the formula



(T37),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

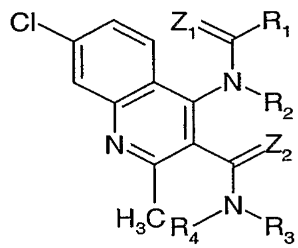
Table 38: This table discloses the 338 compounds T38.1 to T38.338 of the formula



(T38),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

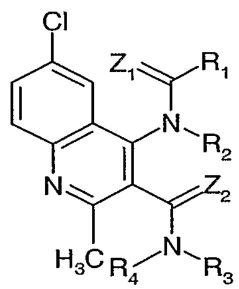
Table 39: This table discloses the 338 compounds T39.1 to T39.338 of the formula



(T39),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

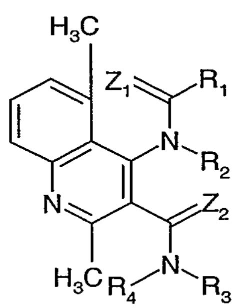
Table 40: This table discloses the 338 compounds T40.1 to T40.338 of the formula



(T40),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

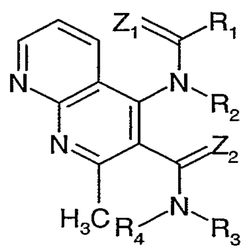
Table 41: This table discloses the 338 compounds T41.1 to T41.338 of the formula



(T41),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

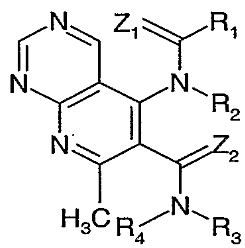
Table 42: This table discloses the 338 compounds T42.1 to T42.338 of the formula



(T42),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

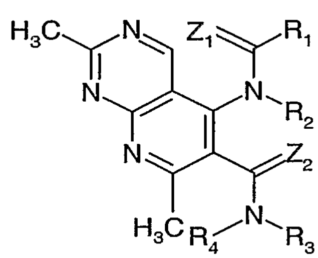
Table 43: This table discloses the 338 compounds T43.1 to T43.338 of the formula



(T43),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

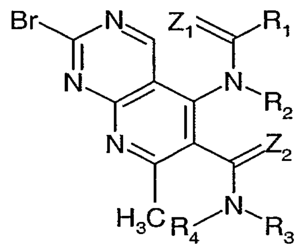
Table 44: This table discloses the 338 compounds T44.1 to T44.338 of the formula



(T44),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

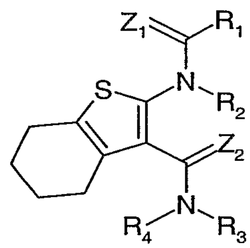
Table 45: This table discloses the 338 compounds T45.1 to T45.338 of the formula



(T45),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

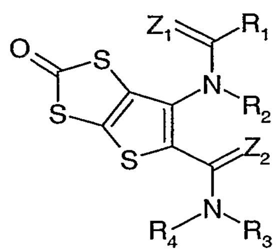
Table 46: This table discloses the 338 compounds T46.1 to T46.338 of the formula



(T46),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

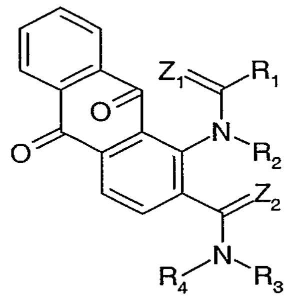
Table 47: This table discloses the 338 compounds T47.1 to T47.338 of the formula



(T47),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

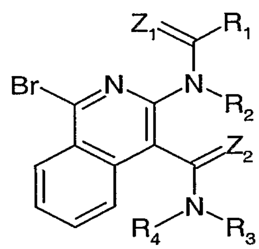
Table 48: This table discloses the 338 compounds T48.1 to T48.338 of the formula



(T48),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

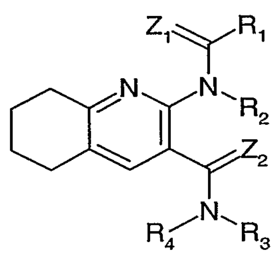
Table 49: This table discloses the 338 compounds T49.1 to T49.338 of the formula



(T49),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

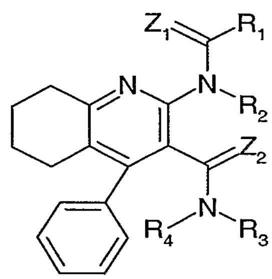
Table 50: This table discloses the 338 compounds T50.1 to T50.338 of the formula



(T50),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

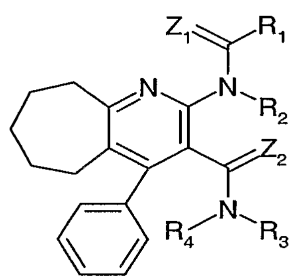
Table 51: This table discloses the 338 compounds T51.1 to T51.338 of the formula



(T51),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

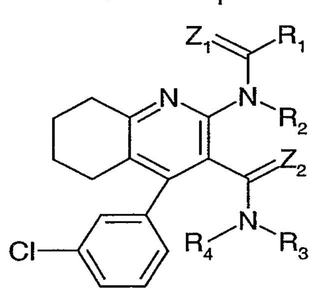
Table 52: This table discloses the 338 compounds T52.1 to T52.338 of the formula



(T52),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

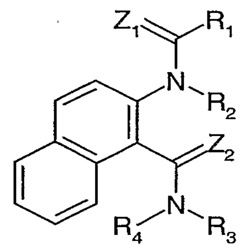
Table 53: This table discloses the 338 compounds T53.1 to T53.338 of the formula



(T53),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

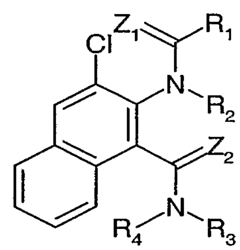
Table 54: This table discloses the 338 compounds T54.1 to T54.338 of the formula



(T54),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

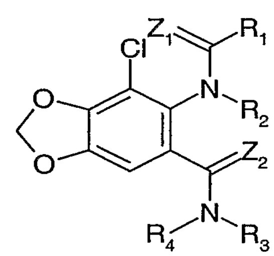
Table 55: This table discloses the 338 compounds T55.1 to T55.338 of the formula



(T55),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

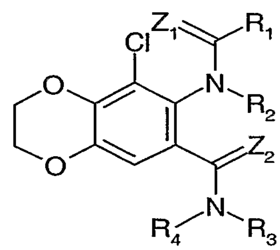
Table 56: This table discloses the 338 compounds T56.1 to T56.338 of the formula



(T56),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

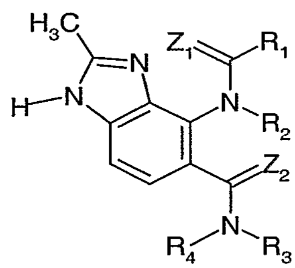
Table 57: This table discloses the 338 compounds T57.1 to T57.338 of the formula



(T57),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

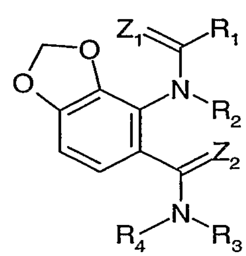
Table 58: This table discloses the 338 compounds T58.1 to T58.338 of the formula



(T58),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

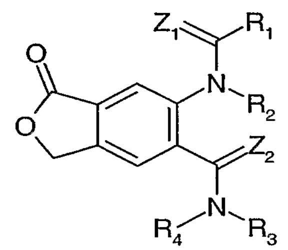
Table 59: This table discloses the 338 compounds T59.1 to T59.338 of the formula



(T59),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

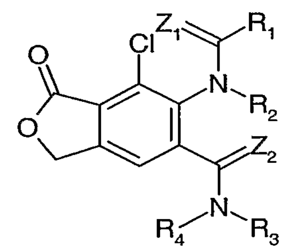
Table 60: This table discloses the 338 compounds T60.1 to T60.338 of the formula



(T60),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

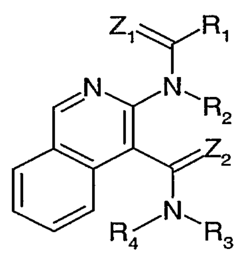
Table 61: This table discloses the 338 compounds T61.1 to T61.338 of the formula



(T61),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

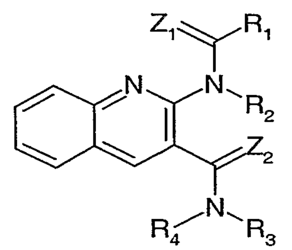
Table 62: This table discloses the 338 compounds T62.1 to T62.338 of the formula



(T62),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

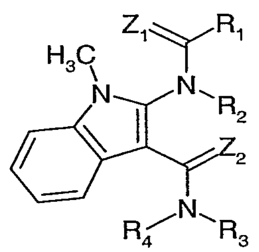
Table 63: This table discloses the 338 compounds T63.1 to T63.338 of the formula



(T63),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

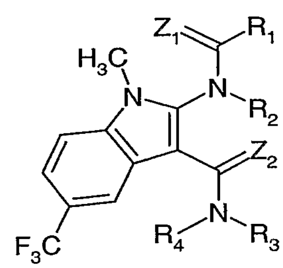
Table 64: This table discloses the 338 compounds T64.1 to T64.338 of the formula



(T64),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

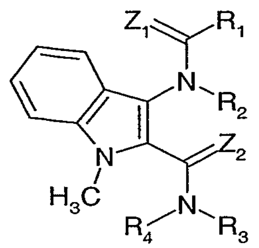
Table 65: This table discloses the 338 compounds T65.1 to T65.338 of the formula



(T65),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

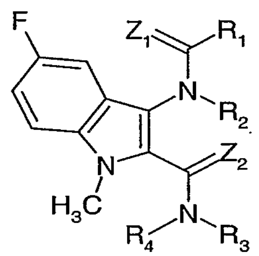
Table 66: This table discloses the 338 compounds T66.1 to T66.338 of the formula



(T66),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

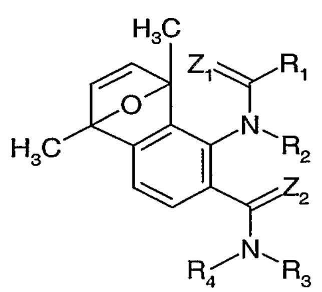
Table 67: This table discloses the 338 compounds T67.1 to T67.338 of the formula



(T67),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

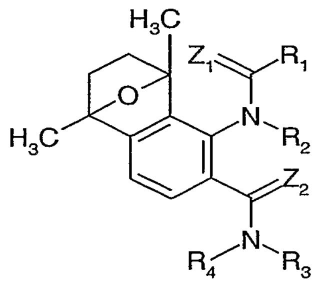
Table 68: This table discloses the 338 compounds T68.1 to T68.338 of the formula



(T68),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

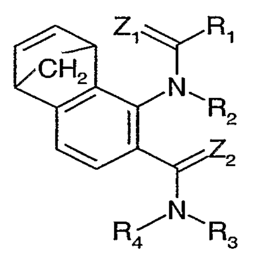
Table 69: This table discloses the 338 compounds T69.1 to T69.338 of the formula



(T69),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

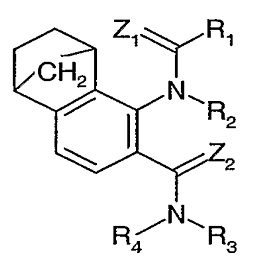
Table 70: This table discloses the 338 compounds T70.1 to T70.338 of the formula



(T70),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

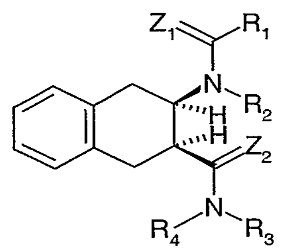
Table 71: This table discloses the 338 compounds T71.1 to T71.338 of the formula



(T71),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

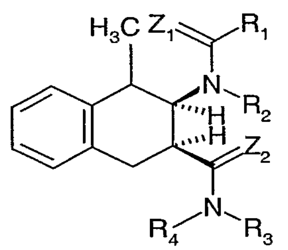
Table 72: This table discloses the 338 compounds T72.1 to T72.338 of the formula



(T72),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

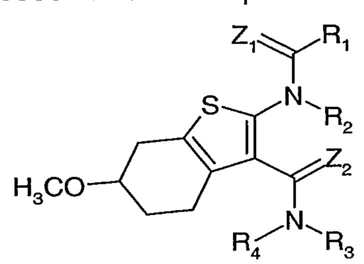
Table 73: This table discloses the 338 compounds T73.1 to T73.338 of the formula



(T73),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

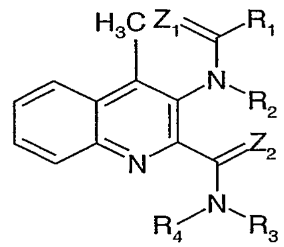
Table 74: This table discloses the 338 compounds T74.1 to T74.338 of the formula



(T74),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

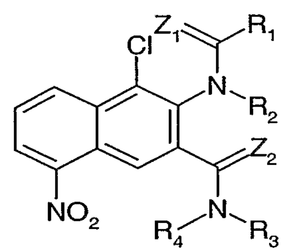
Table 75: This table discloses the 338 compounds T75.1 to T75.338 of the formula



(T75),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

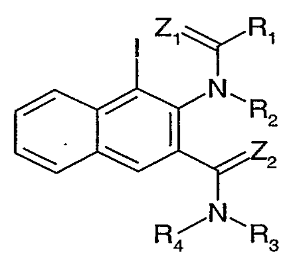
<u>Table 76:</u> This table discloses the 338 compounds T76.1 to T76.338 of the formula



(T76),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

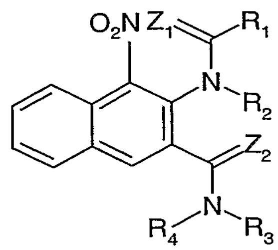
<u>Table 77:</u> This table discloses the 338 compounds T77.1 to T77.338 of the formula



(T77),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

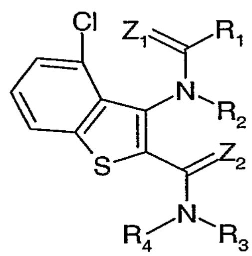
<u>Table 78:</u> This table discloses the 338 compounds T78.1 to T78.338 of the formula



(T78),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

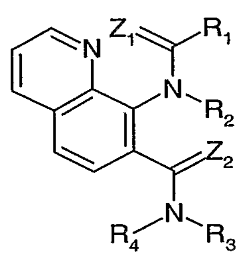
Table 79: This table discloses the 338 compounds T79.1 to T79.338 of the formula



(T79),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

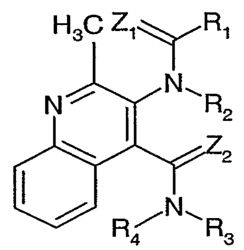
Table 80: This table discloses the 338 compounds T80.1 to T80.338 of the formula



(T80),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

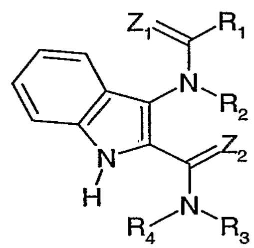
Table 81: This table discloses the 338 compounds T81.1 to T81.338 of the formula



(T81),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

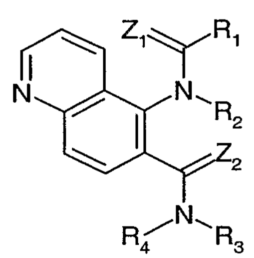
Table 82: This table discloses the 338 compounds T82.1 to T82.338 of the formula



(T82),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

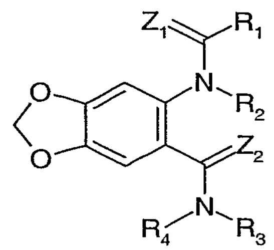
Table 83: This table discloses the 338 compounds T83.1 to T83.338 of the formula



(T83),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

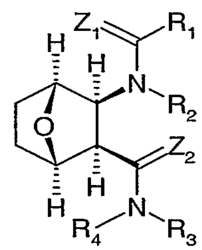
Table 84: This table discloses the 338 compounds T84.1 to T84.338 of the formula



(T84),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

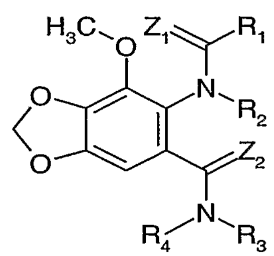
Table 85: This table discloses the 338 compounds T85.1 to T85.338 of the formula



(T85),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

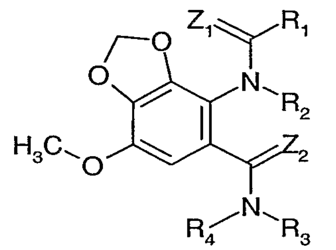
Table 86: This table discloses the 338 compounds T86.1 to T86.338 of the formula



(T86),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

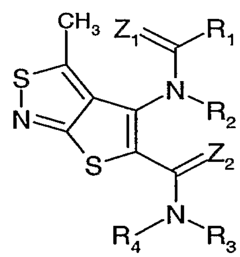
Table 87: This table discloses the 338 compounds T87.1 to T87.338 of the formula



(T87),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

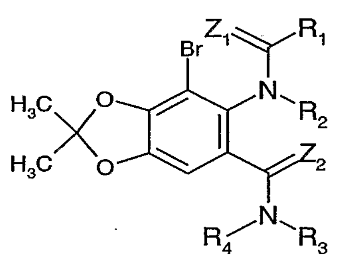
Table 88: This table discloses the 338 compounds T88.1 to T88.338 of the formula



(T88),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

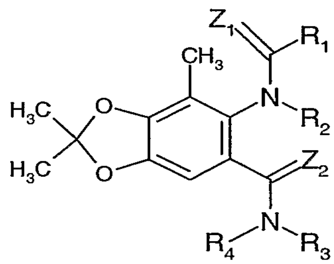
Table 89: This table discloses the 338 compounds T89.1 to T89.338 of the formula



(T89),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

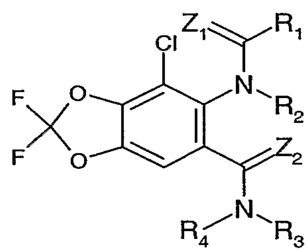
Table 90: This table discloses the 338 compounds T90.1 to T90.338 of the formula



(T90),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

Table 91: This table discloses the 338 compounds T91.1 to T91.338 of the formula



(T91),

in which, for each of these 338 specific compounds, each of the variables Z_1, Z_2, R_1, R_2, R_3 and R_4 has the specific meaning given in the corresponding line, appropriately selected from the 338 lines A.1 to A.338, of the Table A.

Formulation Examples (% = per cent by weight)

Example F1: Emulsion concentrates	a)	b)	c)
Active ingredient	25 %	40 %	50 %
Calcium dodecylbenzenesulfonate	5 %	8 %	6 %
Castor oil polyethylene glycol ether (36 mol of EO)	5 %	-	-
Tributylphenoxypolyethylene glycol ether (30 mol of EO)	-	12 %	4 %
Cyclohexanone	-	15 %	20 %
Xylene mixture	65 %	25 %	20 %

Emulsions of any desired concentration can be prepared from such concentrates by dilution with water.

Example F2: Solutions	a)	b)	c)	d)
Active ingredient	80 %	10 %	5 %	95 %
Ethylene glycol monomethyl ether	20 %	-	-	-
Polyethylene glycol MW 400	-	70 %	-	-
N-Methylpyrrolid-2-one	-	20 %	-	-
Epoxidized coconut oil	-	-	1 %	5 %
Petroleum ether (boiling range: 160-190°)	-	-	94 %	-

The solutions are suitable for use in the form of microdrops.

Example F3: Granules	a)	b)	c)	d)
Active ingredient	5 %	10 %	8 %	21 %
Kaolin	94 %	-	79 %	54 %
Highly disperse silica	1 %	-	13 %	7 %
Attapulgite	-	90 %	-	18 %

The active ingredient is dissolved in dichloromethane, the solution is sprayed onto the carrier(s), and the solvent is subsequently evaporated in vacuo.

Example F4: Dusts	a)	b)
Active ingredient	2 %	5 %
Highly disperse silica	1 %	5 %
Talc	97 %	-
Kaolin	-	90 %

Ready-to-use dusts are obtained by intimately mixing the carriers and the active ingredient.

Example F5: Wettable powders	a)	b)	c)
Active ingredient	25 %	50 %	75 %
Sodium lignosulfonate	5 %	5 %	-
Sodium lauryl sulfate	3 %	-	5 %
Sodium diisobutylnaphthalenesulfonate	-	6 %	10 %
Octylphenoxypolyethylene glycol ether (7-8 mol of EO)	-	2 %	-

Highly disperse silica	5 %	10 %	10 %
Kaolin	62 %	27 %	-

The active ingredient is mixed with the additives and the mixture is ground thoroughly in a suitable mill. This gives wettable powders, which can be diluted with water to give suspensions of any desired concentration.

Example F6: Extruder granules

Active ingredient	10 %
Sodium lignosulfonate	2 %
Carboxymethylcellulose	1 %
Kaolin	87 %

The active ingredient is mixed with the additives, and the mixture is ground, moistened with water, extruded, granulated and dried in a stream of air.

Example F7: Coated granules

Active ingredient	3 %
Polyethylene glycol (MW 200)	3 %
Kaolin	94 %

In a mixer, the finely ground active ingredient is applied uniformly to the kaolin, which has been moistened with the polyethylene glycol. This gives dust-free coated granules.

Example F8: Suspension concentrate

Active ingredient	40 %
Ethylene glycol	10 %
Nonylphenoxypolyethylene glycol ether (15 mol of EO)	6 %
Sodium lignosulfonate	10 %
Carboxymethylcellulose	1 %
37 % aqueous formaldehyde solution	0.2 %
Silicone oil (75 % aqueous emulsion)	0.8 %
Water	32 %

The finely ground active ingredient is mixed intimately with the additives. Suspensions of any desired concentration can be prepared from the thus resulting suspension concentrate by dilution with water.

Biological Examples (% = per cent by weight, unless otherwise specified)

Example B1: Activity against Aphis craccivora

Pea seedlings are infected with Aphis craccivora, subsequently sprayed with a spray mixture comprising 400 ppm of active ingredient and then incubated at 20°. 3 and 6 days later, the percentage reduction in the population (% activity) is determined by comparing the number of dead aphids between the treated and untreated plants.

In this test, compounds listed in the Tables 1 to 85 show good activity.

Example B2: Activity against Diabrotica balteata

Maize seedlings are sprayed with an aqueous emulsion spray mixture comprising 400 ppm of active ingredient and, after the spray coating has dried on, populated with 10 larvae (2nd instar) of Diabrotica balteata and introduced into a plastic container. 6 days later, the percentage reduction in the population (% activity) is determined by comparing the number of dead larvae between the treated and untreated plants.

In this test, compounds listed in the Tables 1 to 85 show good activity. In particular, the compounds T1.1, T1.3, T7.1 and T7.3 have an activity of over 80 %.

Example B3: Activity against Heliothis virescens (foliar application)

Young soya plants are sprayed with an aqueous emulsion spray mixture comprising 400 ppm of active ingredient and, after the spray coating has dried on, populated with 10 caterpillars (1st instar) of Heliothis virescens and introduced into a plastic container. 6 days later, the percentage reduction in the population and in the feeding damage (% activity) are determined by comparing the number of dead caterpillars and the feeding damage between the treated and untreated plants.

In this test, compounds listed in the Tables 1 to 85 show good activity. In particular, the compounds T1.1, T1.3, T2.1, T7.1, T7.3, T75.1, T75.3, T76.1, T76.3, T79.1, T81.1, T2.2, T8.1, T5.1, T5.3, T20.1, T20.3, T9.1, T9.3 and T9.2 have an activity of over 80 %.

Example B4: Activity against Heliothis virescens (application to eggs)

Heliothis virescens eggs, which have been deposited on cotton, are sprayed with an aqueous emulsion spray mixture comprising 400 ppm of active ingredient. After 8 days, the percentage hatching rate of the eggs and the survival rate of the caterpillars (% activity) are evaluated in comparison with untreated control batches.
In this test, compounds listed in the Tables 1 to 85 show good activity. In particular, the compounds T1.1, T1.3, T2.1, T7.1, T7.3, T75.1, T75.3, T76.1, T76.3, T79.1,T81.1, T2.2, T8.1, T5.1, T5.3, T20.1, T20.3, T9.1, T9.3 and T9.2 have an activity of over 80 %.

Example B5: Activity against Myzus persicae (foliar application)

Pea seedlings are infected with Myzus persicae, subsequently sprayed with a spray mixture comprising 400 ppm of active ingredient and then incubated at 20°. 3 and 6 days later, the percentage reduction in the population (% activity) is determined by comparing the number of dead aphids between the treated and untreated plants.
In this test, compounds listed in the Tables 1 to 85 show good activity. In particular, the compounds T1.1 and T7.1 have an activity of over 80 %.

Example B6: Activity against Myzus persicae (systemic application)

Pea seedlings are infected with Myzus persicae, and their roots are subsequently placed into a spray mixture comprising 400 ppm of active ingredient. The seedlings are then incubated at 20°. 3 and 6 days later, the percentage reduction in the population (% activity) is determined by comparing the number of dead aphids between the treated and untreated plants.
In this test, compounds listed in the Tables 1 to 85 show good activity.

Example B7: Activity against Plutella xylostella

Young cabbage plants are sprayed with an aqueous emulsion spray mixture comprising 400 ppm of active ingredient and, after the spray coating has dried on, populated with 10 caterpillars (3rd instar) of Plutella xylostella and introduced into a plastic container. 3 days later, the percentage reduction in the population and in the feeding damage (% activity) are determined by comparing the number of dead caterpillars and the feeding damage between the treated and untreated plants.
In this test, compounds listed in the Tables 1 to 85 show good activity. In particular, the compounds T1.1, T1.3, T2.1, T7.1, T7.3, T22.3, T75.1, T75.3, T76.1, T76.3, T78.1, T79.1,

T81.1, T2.2, T8.1, T5.1, T5.3, T20.1, T20.3, T9.1, T9.3 and T9.2 have an activity of over 80 %.

Example B8: Activity against Spodoptera littoralis

Young soya plants are sprayed with an aqueous emulsion spray mixture comprising 400 ppm of active ingredient and, after the spray coating has dried on, populated with 10 caterpillars (1st instar) of Spodoptera littoralis and introduced into a plastic container. 3 days later, the percentage reduction in the population and in the feeding damage (% activity) are determined by comparing the number of dead caterpillars and the feeding damage between the treated and untreated plants.

In this test, compounds listed in the Tables 1 to 85 show good activity. In particular, the compounds T1.1, T1.3, T2.1, T7.1, T7.3, T75.1, T75.3, T76.1, T76.3, T2.2, T8.1, T5.1, T5.3, T20.1, T20.3, T9.1, T9.3 and T9.2 have an activity of over 80 %.